

IE102 A Process Outlook for Industrial Engineering

Bilkent University

Lecture 2 – Process

Survey Results from Lecture 1

- **Was Industrial Engineering your first choice?**
 - YES:
 - NO:
- **Why did you select IE?**
 - My family/teachers guided me:
 - It is a very popular area/more job opportunities:
 - I am really interested in this area:
 - No reason, my scores were enough for IE:

Meaning of the word “Process”

- Only “Noun” form is considered
- Context may be restricted; we are not interested
- Many alternatives can be found; the following constitute a selective list

Reference 1 - Based on the Random House Dictionary, © Random House, Inc. 2011.

<http://dictionary.reference.com/browse/process>

Reference 2 - Collins English Dictionary - Complete & Unabridged 10th Edition 2009 © William Collins Sons & Co. Ltd. 1979, 1986 © Harper Collins Publishers 1998, 2000, 2003, 2005, 2006, 2007, 2009

<http://dictionary.reference.com/browse/process>

Reference 3 - The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2009. Published by Houghton Mifflin Company. All rights reserved.

<http://www.thefreedictionary.com/process>

Reference 4 –

<http://www.merriam-webster.com/dictionary/process>

Reference 5 - <http://www.macmillandictionary.com/dictionary/british/>

Reference 6 - <http://www.oxforddictionaries.com>

Reference 1

1. a systematic series of actions directed to some end: *to devise a process for homogenizing milk*
2. a continuous action, operation, or series of changes taking place in a definite manner: *the process of decay*
3. the action of going forward or on
4. the condition of being carried on

Reference 2

1. a series of actions that produce a change or development: *the process of digestion*
2. a method of doing or producing something
3. a forward movement
4. the course of time

Reference 3

1. a series of actions, changes, or functions bringing about a result: *the process of digestion; the process of obtaining a driver's license*
2. a series of operations performed in the making or treatment of a product: *a manufacturing process; leather dyed during the tanning process*
3. progress; passage: *the process of time; events now in process*

Reference 4

1. progress, advance in the process of time
2. something going on: proceeding
3. a natural phenomenon marked by gradual changes that lead toward a particular result
4. a series of actions or operations conducing to an end;

Reference 5

1. *a series of things that happen and have a particular result: we use drugs to speed up the healing process.*
2. *a series of actions that have a particular result: learning a language is a slow process.*
3. *a series of actions used to make a product, or to treat it with chemicals: an industrial process*

Reference 6

1. a series of actions or steps taken in order to achieve a particular end: *military operations could jeopardize the peace process*
2. a natural series of changes: *the ageing process*
3. a systematic series of mechanized or chemical operations that are performed in order to produce something: *the manufacturing process is relatively simple*

So?

IE's are interested in processes that are

- a systematic series of actions directed to some end;
- a series of actions that produce a change or development.

✓ What is a “series of actions”?

- Action: Decision (or a set of decisions)
- Series: Decisions are systematically related
- Series: Time axis

So? (continued)

- ✓ What is so special about these decisions?
 - Not simple; complex
 - Recurring – same framework, different states
 - Have economic consequences
- ✓ Where does it happen?
 - Can be for a manufacturing or service system
 - Can be while producing a product or a service
 - Can correspond to improvement of a method
 - Can correspond to design of a method

So? (continued)

✓ What do we need to know?

- Specific to the situation
 - Technicalities of the situation
 - Limitations
 - Measuring economic consequences
- **Knowledge apply in general**
 - **Standardized tools for improvement (design)**
 - **Standardized tools for decision making**
 - **Theory of developing tools**

IE Special Knowledge

Process

Importance of Process

Understanding the need

Improvement

Toast Kaizen video

Process

Processing time decreased

Quality not changed

Additional tasks can also be done to improve service quality

Key words to remember throughout the course:
Performance measure, improvement, mathematical representation, complex environment