# SYE6053: BUSINESS PROCESS IMPROVEMENT AND INNOVATION

#### **Effective Term**

Semester B 2024/25

# Part I Course Overview

#### **Course Title**

Business Process Improvement and Innovation

## **Subject Code**

SYE - Systems Engineering

#### **Course Number**

6053

#### **Academic Unit**

Systems Engineering (SYE)

#### College/School

College of Engineering (EG)

## **Course Duration**

One Semester

#### **Credit Units**

3

#### Level

P5, P6 - Postgraduate Degree

## **Medium of Instruction**

English

#### **Medium of Assessment**

English

## Prerequisites

Nil

#### **Precursors**

Nil

## **Equivalent Courses**

SEEM6053 Business Process Improvement and Innovation (offered until 2021/22) / ADSE6053 Business Process Improvement and Innovation (offered until 2023/24)

#### **Exclusive Courses**

Nil

# **Part II Course Details**

#### **Abstract**

The course aims to instil students, the concept and value of process improvement by applying innovation techniques. Students will learn to appreciate that in today's organizations, process improvement requires analysis with tools; and the capability to improve outcomes with systematic innovative thinking to meet global competitions. This course uses analytical techniques with integration of management tools to let students experience the how's and what's of business process improvement and its role in an organization's long term development.

## **Course Intended Learning Outcomes (CILOs)**

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain what is a process in the context of contemporary Organization	10			
2	Discuss the key elements of process analysis and improvement methodology	20	X		
3	Distinguish the concept and value of innovation techniques	20	X	X	
4	Discuss the key methodologies of systematic innovation techniques for process improvement	20	X	X	
5	Discuss the integration and application of innovation techniques with other management tools	30	х	х	

#### A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

#### A2. Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

#### A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

## Learning and Teaching Activities (LTAs)

	LTAs	<b>Brief Description</b>		Hours/week (if applicable)
1	Lecture	Lecture, class discussion, Q&A	1, 2, 3, 4, 5	39 hours/sem

## Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Group Work	3, 4, 5	30	
2	Individual coursework	1, 2, 3, 4, 5	20	

## Continuous Assessment (%)

## **Examination (%)**

50

## **Examination Duration (Hours)**

2

#### **Additional Information for ATs**

For a student to pass the course, at least 30% of the maximum mark for the examination should be obtained.

## **Assessment Rubrics (AR)**

#### **Assessment Task**

Group Work (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

## Criterion

Quality of submitted group works

## **Excellent**

(A+, A, A-) High

#### Good

(B+, B, B-) Significant

#### Fair

(C+, C, C-) Moderate

## Marginal

(D) Basic

## **Failure**

(F) Not even reaching marginal levels

## **Assessment Task**

Individual coursework (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

#### Criterion

Individual submission

## **Excellent**

(A+, A, A-) High

#### Good

(B+, B, B-) Significant

## Fair

(C+, C, C-) Moderate

## Marginal

(D) Basic

#### **Failure**

(F) Not even reaching marginal levels

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## **Assessment Task**

Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

#### Criterion

Quality of answers

#### Excellent

(A+, A, A-) High

#### Good

(B+, B, B-) Significant

#### Fair

(C+, C, C-) Moderate

## Marginal

(D) Basic

#### **Failure**

(F) Not even reaching marginal levels

#### **Assessment Task**

Group Work (for students admitted from Semester A 2022/23 to Summer Term 2024)

## Criterion

Quality of submitted group works

#### **Excellent**

(A+, A, A-) High

## Good

(B+, B) Significant

## Marginal

(B-, C+, C) Moderate/Basic

## **Failure**

(F) Not even reaching marginal levels

## **Assessment Task**

Individual coursework (for students admitted from Semester A 2022/23 to Summer Term 2024)

#### Criterion

Individual submission

## **Excellent**

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Quality of answers

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## Marginal

(B-, C+, C) Moderate/Basic

#### **Failure**

(F) Not even reaching marginal levels

# **Part III Other Information**

# **Keyword Syllabus**

- · Business process modelling
- · Business process analysis
- · Flow analysis and measurement
- · Process simulation
- · Process streamlining
- · Value analysis
- · Cause and effect chain analysis
- · Systematic innovation (SI)
- · TRIZ
- · Knowledge management

## **Reading List**

## **Compulsory Readings**

	Title
1	Course Notes
2	Guided list of papers on SI and Business Process Improvement

## **Additional Readings**

	Title
1	Ravi Anupindi, Sunil Chopra, Sudhakar D. Deshmukh, Jan A. Van Mieghem, & Eitan Zemel, "Managing Business Process Flows, Principles of Operations Management" Pearson Prentice Hall.
2	Darrell Mann Hands on Systematic Innovation IFR Press,2007

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- David Bustare, Peter Kawalek, Mark Norris, editors, "Systems Modeling for Business Process Improvements" Artech House, 2000