

SYE5006: OPERATIONS MANAGEMENT

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Operations Management

Subject Code

SYE - Systems Engineering

Course Number

5006

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

SEEM5006 Operations Management (offered until 2021/22) / ADSE5006 Operations Management (offered until 2023/24)

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to develop students' abilities to manage engineering operations by introducing them to notions of operations systems and focusing on the strategic role of operations in an overall business context and on problem solving to improve operations systems in the short and long term.

Course Intended Learning Outcomes (CILOs)

| CILOs | Weighting (if app.) | DEC-A1 | DEC-A2 | DEC-A3 |
|-------|---|--------|--------|--------|
| 1 | Define and formulate operations strategy | 5 | | |
| 2 | Define product and service design processes and plan operations process | 15 | | |
| 3 | Forecast demand and formulate basic inventory policies | 30 | x | x |
| 4 | Plan and schedule operations facilities and capacities for effective resource utilization | 30 | x | x |
| 5 | Apply appropriate methods for operations planning and scheduling | 20 | | |

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 | Brief Description | CILO No. | Hours/week (if applicable) | |
|------|------------------------|--|----------------------------|-------------|
| 1 | Large Class Activities | Introduction and explanation of theory through examples | 1, 2, 3, 4, 5 | 26 hrs/ sem |
| 2 | Group Activities | Further learning theory from solving problems together by members in a group | 1, 2, 3, 4, 5 | 13 hrs/ sem |

Assessment Tasks / Activities (ATs)

| ATs | CILO No. | Weighting (%) | Remarks ("- for nil entry) | Allow Use of GenAI? | |
|-----|------------------------------|---------------|----------------------------|---------------------|----|
| 1 | Participation & Exercises | 1, 2, 3, 4, 5 | 20 | - | No |
| 2 | Case Studies & Mini Projects | 1, 2, 3, 4, 5 | 20 | - | No |

Continuous Assessment (%)

Examination (%)

60

Examination Duration (Hours)

2

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

30

Assessment Rubrics (AR)

Assessment Task

1. Participation & Exercises (Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Submitted solutions to individual assignments and mid-term test.

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

2. Case Studies & Mini Projects (Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Submitted group work and presentations.

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

3. Examination (Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Submitted solutions to the final examination.

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

1. Participation & Exercises (Applicable to students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Submitted solutions to individual assignments and mid-term test.

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

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

Failure

(F) Not even reaching marginal levels

Assessment Task

2. Case Studies & Mini Projects (Applicable to students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Submitted group work and presentations.

Excellent

(A+, A, A-) High

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Assessment Task

3. Examination (Applicable to students admitted from Semester A 2022/23 to Summer Term 2024)

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Part III Other Information

Keyword Syllabus

- Operations Strategy
- Product and Service Design
- Processes and Technologies
- Capacity and Facilities Planning
- Forecasting
- Inventory Management
- Aggregate Sales and Operations Planning
- Resource Planning
- Operations Scheduling

Reading List

Compulsory Readings

| Title | |
|-------|-----|
| 1 | Nil |

Additional Readings

| | Title |
|---|---|
| 1 | Operations Management, 6th Edition, Russell & Taylor, John Wiley & Sons |