

SYE4007: ELOGISTICS AND SUPPLY CHAIN MANAGEMENT

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

eLogistics and Supply Chain Management

Subject Code

SYE - Systems Engineering

Course Number

4007

Academic Unit

Systems Engineering (SYE)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

MA1201 Calculus and Basic Linear Algebra II or
MA1301 Enhanced Calculus and Linear Algebra II

Precursors

Nil

Equivalent Courses

ADSE4007 eLogistics and Supply Chain Management

Exclusive Courses

Nil

Part II Course Details

Abstract

In this course, the students will learn the basic concepts of eLogistics and supply chain management, including e-Business, purchasing, supplier management, inventory control, materials planning, materials transportation and distribution, application of big data, and the general aspects of reversed logistics.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	describe the activities involved and key decisions made in combining various firms in electronic business to make a final product and delivering to a customer	20	x	x	
2	apply analytical methods for making decisions for managing inventories and transporting materials in a logistics network	30		x	
3	describe the impact of material sourcing and information sharing policies of a firm on the performance of a logistics network	30	x	x	
4	identify trends and issues in reverse logistics and global logistics	20	x	x	

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	Lecture	Learning through teaching is primarily based on lectures. Mini-lectures and small-group exercises will be used to facilitate conceptual understanding of logistics problems and methodologies in e-Business.	1, 2, 3, 4	39 hours/semester
2	Online Tutorial	Class exercises and assignments will be discussed.	1, 2, 3, 4	13 hours/semester

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Mid-Term Test	1, 2	10	-	No
2	Individual Assignments	1, 2, 3, 4	20	-	No
3	Group Project	2, 3, 4	20	-	No

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

30

Assessment Rubrics (AR)**Assessment Task**

Mid Term Test

Criterion

It is to assess students understanding of basic concepts in logistics and numerical calculation of logistics solutions.

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 Assignments

Criterion

It is related to students' ability to understand concepts and theories taught in class.

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 Project

Criterion

ABILITY to identify novel applications of state-of-the-art data analytics tools in supply chain systems.

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

Examination

Criterion

Examination questions are designed to assess students' level of achievement of the intended learning outcomes, with balanced emphasis placed on conceptual understanding of logistics problems, applications of the various logistics management methods, and numerical calculation of logistics solutions.

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

Additional Information for AR

Examination, test, and assignment will be numerically marked.

Part III Other Information**Keyword Syllabus**

- The Functions of eLogistics and Supply Chain Management in e-Business
- Principles of electronic Purchasing and Purchase Order Processing
- Contract Administration
- Advanced Methods for Demand Forecasting (such as ARIMA, LASSO techniques, Spatial-temporal time series analysis, artificial neural networks, etc.)
- Advanced Methods for Materials and Inventory Management (such as probabilistic inventory control)
- Electronic Data Interchange (EDI) and the application in e-Business
- Transportation, mathematical programs for optimizing transportation and network flow cost
- Application of Big Data
- Reversed Logistics, quantitative models for reversed logistics
- Bullwhip effect, square root law for bullwhip effect

Reading List**Compulsory Readings**

Title	
1	Nil

Additional Readings

Title	
1	SUNIL CHOPRA & PETER MEINDL, Supply Chain Management, 4th Edn., Pearson Education, 2010.
2	SIMCHI-LEVI, KAMINSKY & SIMCHI-LEVI, Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies, 3rd Edn., McGraw-Hill, 2009.
3	EDWARD ALLEN SILVER, DAVID F. PYKE & REIN PETERSON, Inventory Management and Production Planning and Scheduling, 3rd Edn., Wiley, 1998.
4	DAVID J. BLOOMBERG, STEPHEN LEMAY & JOE B. HANNA, Logistics, Prentice-Hall, Inc., 2002.
5	DONALD J. BOWERSOX, DAVID J. CLOSS & M. BIXBY COOPER, Supply Chain Logistics Management, McGraw-Hill Book Companies Inc., 2003.
6	Moritz Fleischmann, Quantitative Models for Reverse Logistics, Springer, Berlin, 2001
7	SHERRY R. GORDON, Supplier Evaluation and Performance Excellence: A Guide to Meaningful Metrics and Successful Results, J. Ross Publishing, 2008.
8	JAMES A. TOMPKINS, Facilities planning, 4th Edn, John Wiley & Sons, 2010
9	GARY P. SCHNEIDER, E-business, 9th Edn., Course Technology/Cengage Learning, 2011.

10	LEE IN, Electronic Commerce Management for Business Activities and Global Enterprises : Competitive Advantages, IGI Global, 2012
11	DAVE CHAFFEY, Digital Business and E-Commerce Management, 7th Edn, Tanya Hemphill, 2019