



Course Specification

— (Postgraduate)

Course Title: EMERGING TOPICS IN SUPPLY CHAIN

Course Code: SCM 542

Program: EXECUTIVE MASTER IN SUPPLY CHAIN MANAGEMENT

Department: MANAGEMENT

College: COLLEGE OF BUSINESS

Institution: AL YAMAMAH UNIVERSITY

Version: 1

Last Revision Date: 18/03/2025



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A. General information about the course:

1. Course Identification:

1. Credit hours: 3

(3, 0, 0)

2. Course type

A. University College Department Track

B. Required Elective

3. Level/year at which this course is offered: (Level 4/2nd year)

4. Course general Description:

This course explores the latest trends, technologies, and challenges shaping the modern supply chain landscape. It covers advancements in digitalization, Industry 4.0, digital twins in supply chain management, and cyber security and data protection in supply chains. Through relevant knowledge, case studies and research-based discussions, students will critically analyze emerging innovations and develop forward-looking strategies for supply chain excellence.

5. Pre-requirements for this course (if any):

N/A

6. Pre-requirements for this course (if any):

Not Applicable

7. Course Main Objective(s):

The course aims at providing students with in depth knowledge and understanding of different topics related to the emerging trends in supply chains. The purpose of this course is to allow students to explore recent topics and tools regarding excellence of supply chain's management and operation in light of utilizing contemporary advanced technologies. They will be allowed to study and discuss different case studies of applying new technologies to manage and operate supply chains.

Upon successful completion of this course, students will be able to:

1. Identify emerging trends in supply chains, and analyze latest developments in supply chain management.
2. Explore technological innovations in supply chain management, and understand the role of digitalization, AI, blockchain, IoT, and automation in supply chain operations.
3. Analyzes the factors involved in the digital transformation of supply chain relationships.
4. Examine New Business Models and Supply Chain Innovations, and explore the impact of e-commerce, Omnichannel retailing, and demand-driven supply chains.
5. Develop data-driven strategies for supply chain agility and responsiveness.



2. Teaching Mode: (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|----|-----------------------|-----------------|------------|
| 1 | Traditional classroom | 3 hrs. per week | 75% |
| 2 | Distance-Learning | 0 hrs. per week | 0% |
| 3 | E-learning | 1 hrs. per week | 25% |

3. Contact Hours: (based on the academic semester)

| No | Activity | Contact Hours |
|-------------------------|--------------------|---------------|
| 1. | Lectures | 3 |
| 2. | Group Case studies | 1 |
| 3. | Field assignments | 0 |
| 4. | Others (Seminars) | 1 |
| Total (per week) | | 5 |

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|------------|---|---------------------------------------|--|--|
| 1.0 | Knowledge and understanding | | | |
| 1.1 | Comprehend knowledge about recent topics in supply chain management | CLO1 Knowledge and Understanding (K2) | Student-Centric: Discussion, Analysis, Abstraction, and Seminars | Mid-terms, Quizzes, Presentations and final exam |
| 1.2 | Understand the knowledge of using advanced technologies in supply chain management | CLO2 Knowledge and Understanding (K3) | Student-Centric: Discussion, Analysis, Abstraction, and Seminars | Mid-terms, Quizzes, Presentations and final exam |
| 2.0 | Skills | | | |
| 2.1 | Critically assess application of recent technologies in solving supply chain problems | CLO3 Cognitive Skill (S2) | Student-Centric: Discussion, Analysis, Abstraction, and Seminars | Mid-terms, Quizzes, Presentations and Final exam |
| 3.0 | Values, autonomy, and responsibility | | | |
| 3.1 | Implement project activities to apply modern tools in supply chain management | CLO4 Autonomy and Responsibility (V2) | Student-Centric: Discussion, Analysis, Abstraction, and Seminars | Presentations and Group-work Project |





C. Course Content:

| No | List of Topics | Contact Hours |
|--------------|--|---------------|
| 1 | Introduction to Emerging Topics in SCM | 03 |
| 2 | Digital Supply Chains & Industry 4.0 | 06 |
| 3 | Digital Twins & Metaverse in SCM | 06 |
| 4 | Blockchain & Decentralized Supply Chains | 09 |
| 5 | E-commerce & Omni-Channel Supply Chains | 09 |
| 6 | Cybersecurity & Data Protection in SCM | 06 |
| 7 | Case Studies and Applications | 06 |
| Total | | 45 |

D. Students Assessment Activities:

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|----|--|--------------------------------|--------------------------------------|
| 1. | Quizzes | Every week | 20% |
| 2. | Mid-terms | After week 7 | 20% |
| 3. | Presentations/Group Project/Case Studies | 13th week onwards | 20% |
| 4. | Final exam | After week 15 | 40% |

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities:

1. References and Learning Resources:

| | |
|------------------------------|---|
| Essential References | <p>Bart L. MacCarthy (Editor), Dmitry Ivanov (2022). <i>The Digital Supply Chain</i>. ELSEVIER Inc. ISBN: 9780323916158 https://shop.elsevier.com/books/the-digital-supply-chain/maccarthy/978-0-323-91614-1</p> <p>Aktas, E., Bourlakis, M., Minis, I. , Zeimpekis, V. (2021). <i>Supply Chain 4.0: Improving Supply Chains with Analytics and Industry 4.0 Technologies</i>. https://www.oreilly.com/library/view/python-for-data/9781098104023/</p> |
| Supportive References | <p>Trevor Clohessy (2023). <i>Blockchain in Supply Chain Digital Transformation</i>. Routledge Inc. ISBN 9781032188799 https://www.routledge.com/Blockchain-in-Supply-Chain-Digital-Transformation/Clohessy/p/book/9781032188799?srsId=AfmBOoryHCHu5U8LR2yL_mbvIciWMNu5aWoJOv8bFGOIJ41ITNejY9F3</p> |
| Electronic Materials | Related research papers and case studies. |
| Other Learning | <u>Industry Reports</u> |





Materials

- DHL (2023).** *Big Data & AI in Logistics: Transforming Supply Chains*
<https://www.dhl.com/global-en/delivered/innovation/big-data-analytics-in-supply-chain-management.html>
 - McKinsey & Co. (2017).** *Supply Chain 4.0 – the next-generation digital supply chain*
<https://www.mckinsey.com/capabilities/operations/our-insights/supply-chain-40--the-next-generation-digital-supply-chain>
- World Economic Forum (2024).** *AI & Digital Transformation in Supply Chains: 2024 Report.*
<https://www.weforum.org/stories/2025/01/ai-supply-chains/>

2. Educational and Research Facilities and Equipment Required:

| Items | Resources |
|---|----------------------------------|
| Facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | Classrooms |
| Technology equipment (Projector, smart board, software) | Projector, smart board, software |
| Other equipment (Depending on the nature of the specialty) | To be requested as per need |

F. Assessment of Course Quality:

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|--------------------------------|--|
| Effectiveness of teaching | Students | Indirect method (Course evaluation survey) |
| Effectiveness of students assessment | Program Leaders, Peer Reviewer | Direct and Indirect method (Course results and survey) |
| Quality of learning resources | Faculty and Students | Indirect method (Resources evaluation survey) |
| The extent to which CLOs have been achieved | Faculty and Students | Direct method (Course results) Indirect method (Course evaluation survey) |
| Other | | |

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

| | |
|--------------------|--|
| COUNCIL /COMMITTEE | |
| REFERENCE NO. | |
| DATE | |

