

Course Syllabus Operations and Supply Chain Management II (Operations Management: Gestión de Operaciones)

August – December 2026

Term VIII

Professor

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I. General Course Information

Subject:	Operations and Supply Chain Management II (Gestión de Operaciones)		
Pre-requisite::	Planeamiento y Control de la Producción (Production Planning and Control), Operations and Supply Chain Management I	Code:	02857
Precedent:	None	Semester:	2026-2z
Credits::	3	Term:	VIII
Weekly Hours:	4	Course type:	In person
Type Program(s)	Mandatory Industrial and Commercial Engineering	Course Coordinator:	Gareth Huw Rees gress@esan.edu.pe

II. Summary

The course provides the student with theoretical and practical knowledge and is oriented to the analysis of the operational environment of organizations, be it a service, productive or transformation organization. It covers the following topics: The function of operations, strategies and systems approach of operations management, productivity indicators, management techniques, the study of methods and measurement of work, location, forecasts, design, capacity and distribution of facilities, elements of inventory management, design of service operations, materials requirement planning and Just-in-Time manufacturing.

III. Course Objectives

The Course Objective is to prepare students to effectively recognize and analyze the different methodologies, processes and tools used to improve the productivity of organizations and implicitly oriented to control and improve the management of operations in both goods and services, which will allow the student to contribute efficiently in improving the operational process of organizations.

IV. Learning Results

At the end of the course, students will be able to:

- Explain the role, activities and strategies of operations management
- Apply the techniques required to improve processes using observed time, standard time and supplemental work time.
- Apply productivity concepts to both production and service activities
- Identify and apply the appropriate methodology to locate and size a plant.
- Design effective plant layouts.
- Develop the planning, design and operation of an effective process.
- The ability to design solutions to complex engineering problems and design systems, components, or processes to meet desired needs within realistic public health and safety, cultural, social, economic, and environmental constraints.

- Propose and select the most appropriate methodology to do the planning and location of services.
- The ability to perform effectively as an individual, as a member or leader of diverse teams.
- The ability to communicate effectively, by understanding and writing reports and design documentation, making presentations, and transmitting and receiving clear instructions.
- The ability to create, select and use modern engineering and information technology techniques, skills, resources and tools, including prediction and modeling, with an understanding of their limitations.

V. Methodology

Classes will be conducted to stimulate the active participation of students, the teacher will fulfill their role as a guide, mentor, and motivator in the learning process. Teamwork will be combined to reinforce the learning process and develop the necessary skills in the participant, to perform successfully.

It is desirable that before each class the participant read, from the recommended text, the topic scheduled to be addressed, so that they may formulate pertinent questions. Likewise, after each class, the participant should also complement the topic worked on with the texts indicated in the supplementary bibliography and, if necessary, consult with the professor.

Learning Teams Activities

During the regular sessions, students will work in pairs or small informal groups to analyze cases or issues that we will discuss during the session. Student participation is expected and included as part of PEP grade.

In the second week, the class will set up formal Learning Teams of 3 to 5 students; these Learning Teams will complete and present a Case Study before the Mid-Term Exam. If a student experiences difficulty working with his/her team, he/she should resolve those issues with his/her teammates, but if, however, that is not possible, please raise those issues with the Professor.

ESAN students are expected to work effectively in diverse groups and teams to achieve tasks and goals. They should therefore collaborate and function well in team settings performing leader as well as follower roles. They should respect diversity and behave in a tolerant fashion toward colleagues.

VI. Evaluation

The evaluation system is comprehensive and continuous with the objective of promoting learning in the student. The final grade is composed of Continuous Evaluation (PEP) (70%), and Final evaluation (30%).

The Average Permanent Evaluation is calculated based on the student's learning process follow-up: Reading Controls/ Quizzes / Cases/Presentations / Research Work / Class Contribution. The weighted average of these marks results in the corresponding score is presented in the following table.

AVERAGE PERMANENT EVALUATION 70%		
Type of evaluation	Description	Weight %
Participation	Attendance, punctuality and class participation	20%
Reading Controls (RC)	Four Reading Controls (5% each)	20%
Methods Tests (MT)	Three tests (10 marks each) <i>lowest eliminated</i>	20%
Applied Integral Project	Two Team Deliverables (20 marks each)	40%

Final Grade (PF) is calculated using the following formula:

$$PF = (0,70 \times PEP) + (0,30 \times EF)$$

Where:

PF = Final Grade
 PEP= Continuous Evaluation
 EF = Final Exam

VII. Programmed Content

WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT I (LU I): INTRODUCTION TO OPERATIONS MANAGEMENT AND ITS APPLICATION IN DIFFERENT SECTORS LEARNING OUTCOME: - Explain the role, activities and strategies of operations management. - Apply productivity concepts to both production and service activities.		
1° Del 17 al 23 de agosto	1. Introduction to Operations Management - Operations Management (OM) - What is OM? - Organizing to Produce Goods and Services - Description of OM - What OM Managers do? - Operations for Goods and Services - The Productivity Challenge - Current Challenges in OM Stevenson, W.J. (2021), Ch. 1, pp 2-39	Presentations: Course Methodology Guideline - review for Final Research Work Guideline - Review for UESAN written work presentation (APA Standards) Guideline - Effective Presentations ----- Introduction to OM and Productivity Activities: Short Cases and Exercises Assignment: Groups set
2° Del 24 al 30 de agosto	2. Competitiveness, Strategy, and Productivity - Global View of Operations and Supply Chains - Achieving Competitive Advantage through Operations - Issues in Operations Strategy - Strategy Development and Implementation - Core competencies and Outsourcing - Operations performance - Definition of Productivity - Productivity Trends - Measuring productivity Stevenson, W.J. (2021), Ch. 2, pp 40-73	Presentations: - Operations Strategy - Performance and Productivity Activities: Short Cases and Exercises

WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT II (LU2): OPERATIONS MANAGEMENT CONCEPTS AND PRINCIPLES LEARNING OUTCOME: • Apply the techniques required to improve processes using observed time, standard time and supplemental work time. • Apply productivity concepts to both production and service activities. • The ability to design solutions to complex engineering problems and design systems, components, or processes to meet desired needs within realistic public health and safety, cultural, social, economic, and environmental constraints. • The ability to create, select and use modern engineering and information technology techniques, skills, resources and tools, including prediction and modeling, with an understanding of their limitations.		
3° Del 31 de agosto al 06 de septiembre	3. Operations Management: Concepts and Calculations: 1. Process types 2. Impacts of technology on processes 3. Takt Time 4. Standard Time 5. Cycle Time 6. Lead Time 7. OEE 8. Lot sizing	Presentations: - Processes and Op Mgt - Process measures Exercises: - Standard Time - Time calculation exercises - https://www.oeo.com/calculating-oeo/
	Stevenson, W.J. (2021). Ch. 6, pp. 244-298,	Assessment: RC1: Stevenson Ch 1, 2
4° Del de 07 al 13 septiembre	4. Lean and Operations Management 1. Lean Systems Characteristics 2. Lean as a Strategy 3. Lean Process Design 4. Lean Manufacturing 5. Lean Tools 6. Value Stream Mapping 7. Process Improvement - 5W2H 8. Kanban 9. Lean and Six Sigma	Presentations: - Lean Systems - Lean tools Activities: Short Cases and Exercises
	Stevenson, W.J. (2021). Ch 14, pp. 610-653	
5° Del de 14 al 20 septiembre	6. Implementing and sustaining Lean 10. JIT Delivery and the Supply Chain 11. Lean and ERP 12. Transitioning to Lean 13. Cooperative Spirit 14. Lean in Services	Presentations: - Lean tools - Implementing Lean Activities: Short Cases and Exercises
	Stevenson, W.J. (2021). Ch 14, pp. 610-653	

WEEK	CONTENTS	ACTIVITIES / EVALUATION
6° Del de 21 al 27 septiembre	7. Layout Decisions 1. The Strategic Importance of Layout Decisions 2. Warehouse and Storage Layouts 3. Fixed Position Layout 4. Process Oriented Layout 5. Line balancing	Presentations: - Layout Strategies - Positional orientations Activities: Short Cases and Exercises
	METHODS TEST #1 (2nd session) Stevenson, W.J. (2021). Ch. 6, pp. 244-298	Assessment MT#1: Process / Productivity indicators and Lean production balancing.
LEARNING UNIT III (LU3): PLANT LOCATION AND SIZING LEARNING OUTCOME: • Identify and apply the appropriate methodology to locate and size a plant. • Propose and select the most appropriate methodology to do the planning and location of services. • The ability to perform effectively as an individual, as a member or leader of diverse teams. • The ability to communicate effectively, by understanding and writing reports and design documentation, making presentations, and transmitting and receiving clear instructions. • The ability to create, select and use modern engineering and information technology techniques, skills, resources and tools, including prediction and modeling, with an understanding of their limitations.		
7° Del de 28 septiembre al 04 octubre	8. Location Strategies 1. Location and Capacity 2. Actors that affect location decisions 3. Methods of Evaluating Location Alternatives	Presentations: - Location strategies - Evaluation Methods Activities: Short Cases and Exercises
	Stevenson, W.J. (2021). Ch 8, pp. 348-419	Assessment: Final Project part 1 to be delivered next week
8° Del de 05 al 11 octubre	PROJECT Part 1 Presentation	Assessment: Group Project Part 1 due Assessment: RC2 Stevenson Ch 6 & 14
9° Del 12 al 18 de octubre	9. Capacity Planning 1. Capacity and Constraint Management 2. Bottleneck Analysis 3. Break Even Analysis 4. Risk Reduction	Presentations: - Capacity and Constraint Management - Capacity analysis methods Activities: Short Cases and Exercises
	Stevenson, W.J. (2021). Ch 5, pp. 190-219	
10° Del de 19 al 25 octubre	10. Maintenance and Reliability 1. The Strategic Importance of Maintenance and Reliability 2. Reliability & Loss Function 3. Maintenance 4. Total Productive Maintenance (TPM)	Presentations: - Maintenance and reliability Activities: Exercises
	Stevenson, W.J. (2021). Ch 5, pp. 190-219	Assessment: RC 3 Stevenson Ch 8 & 5

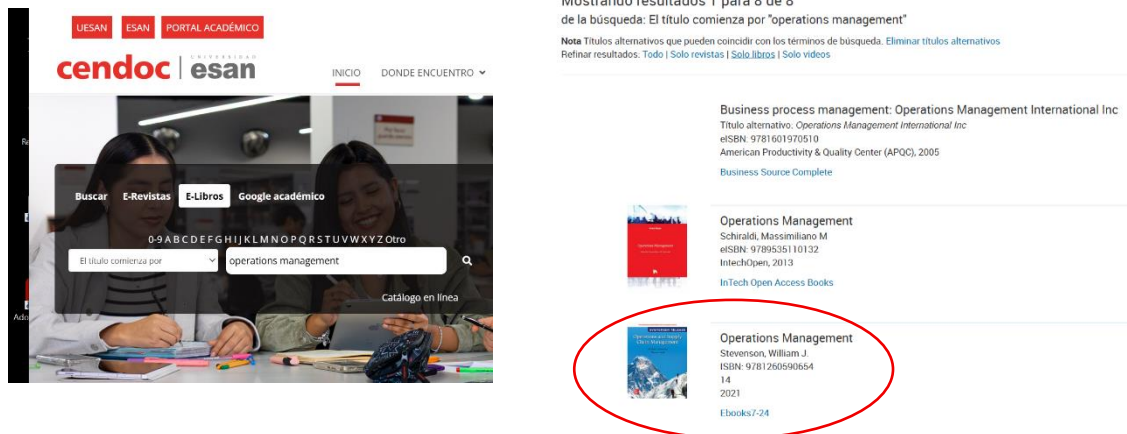
WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT IV (LU4): ADVANCED TOPICS		
LEARNING OUTCOME: • Develop the planning, design and operation of an effective process. • The ability to create, select and use modern engineering and information technology techniques, skills, resources and tools, including prediction and modeling, with an understanding of their limitations.		
11° Del de 26 octubre al 01 noviembre	11. Work Design and Measurement 1. Job design, 2. Quality of work 3. Work measurement	Presentations: - Job Design Activities: Exercises -
	METHODS TEST #2 (2nd session) Stevenson, W.J. (2021). Ch 7, pp. 300-335	Assessment MT#2: Layout models, Location, capacity analyses
12° Del de 02 al 08 noviembre	12. Short Term Scheduling 1. Scheduling Issues 2. Scheduling high – medium volume systems 3. Low Volume systems 4. Scheduling Services	Presentations: - Short-term Scheduling - Scheduling analysis Activities: Short Cases and Exercises
	Stevenson, W.J. (2021). Ch 16, pp. 692-731	Assessment: RC4 Stevenson Ch 7 & 16
13° Del de 09 al 15 noviembre	13. Operations Improvement 1. Types of Change 2. Key elements of operations improvement 3. Approaches to operations improvement 4. Differences and Similarities	Presentations: - Operations Improvement - Process technologies Activities: Short Cases and Exercises
	METHODS TEST #3 (2nd session) Slack et al. (2019) Ch 16	Assessment MT#3: Scheduling and Maintenance analyses
14° Del de 16 al 22 noviembre	14. Process Technologies 1. Process vs Product technology 2. Transformed resources 3. Process technology potentials 4. Process technology evaluation	Presentations: - Process technologies - AI in Operations Management Activities: Short Cases and Exercises
	15. AI in Operations Management 5. AI and Operations 6. Innovations in different operations environments 7. Industry 4.0 8. Lean AI tools	Interactive Activity: - In class group research session using LLMs
15° Del de 23 al 29 noviembre	Slack et al. (2019) Ch 8 Dogru and Keskin (2020) & Hemold (2020) Ch 14	Group Project Part 2 Presentation
	GROUP PRESENTATIONS COURSE REVIEW & EXAM BRIEFING	
16° Del de 30 noviembre al 06 diciembre	FINAL EXAM WEEK	

VIII. Bibliography

Mandatory Readings:

- Stevenson, W. J. (2021) *Operations Management*. (14th Ed.) NY: McGraw-Hill – Selected Chapters.

Access this textbook through CENDOC e libros (Search word: operations management) provided by [Ebooks7-24](#)



- Slack, N. & Brandeion-Jones, A. 2019, *Operations Management* (9th Ed.) Harlow, England: Pearson – Selected Chapters.
- Dogru, A. K., & Keskin, B. B. (2020). AI in operations management: applications, challenges and opportunities. *Journal of Data, Information and Management*, 2(2), 67-74. Doi: <https://doi.org/10.1007/s42488-020-00023-1>
- Hemold, M. (2020) Ch 14 - [Lean Management and Artificial Intelligence \(AI\)](#), in *Lean Management and Kaizen: Fundamentals from Cases and Examples in Operations and Supply Chain Management*, Springer Nature, pp131-137

Similar readings in Spanish:

- Chase, R. (2014). *Administración de Operaciones: producción y cadena de suministros*. México: McGraw-Hill Educación. [TS155, C3A2, 2014]
- Heizer, J. & Render, B. (2009). *Principios de Administración de Operaciones*. México: Pearson Educación. [TS155, H3720, 2009]

Other relevant books in ESAN Library:

- Miranda González, F. (2014). *Dirección de operaciones: casos prácticos y recursos didácticos*. Madrid: Ediciones Paraninfo. [TS155 M573]
- Nahmias, Steven. (2007). *Análisis de la producción y las Operaciones*. México D. F.: Compañía Editorial Continental. [TS155, N112 ,2007]
- Nahmias, Steven (2014) *Análisis de la producción y las operaciones*-McGraw-Hill Interamericana de España (2014)

Ethical Expectations of Students:

Use of AI and LLMs:

The Turnitin portal will be used for assessing poor academic practices including the use of AI for producing assignments. This portal detects plagiarism and AI production. If AI work is detected at high levels, the submission will come under greater scrutiny.

To avoid grade problems, use good AI ethics by declaring the use of AI in your projects by including an AI declaration stating how AI supported the production of the assignment, e.g., for basic research direction, finding key documents, finding a range of sources, outlining or

formatting and translation. DO NOT rely on AI to provide your answers and simply reproduce these and represent it as your own work.

All written assignments are expected to be in your own words; however, AI may be used as a translation tool. Please recognize that AI translation assistance may impact the Turnitin score, so a declaration of its use is required.

Formative evaluations such as quizzes are set to gauge the level of learning. Therefore, using AI to select quiz answers is considered to be learning avoidance. Rather, use AI as a study tool to help you prepare for quizzes and to assist you to better understand the course content before taking the quizzes.

Research:

While you may use and cite non-academic resources such as Wikipedia when working on assignments, you should not rely on them exclusively. Most of your theory-based sources should be peer-reviewed academic journals or chapter readings. Further, remember that you are responsible for the accuracy of any facts you present in your assignments and therefore should confirm the information you find from non-academic sources through further verification and triangulating sources.

IX. Profesores

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