Course Syllabus

Operations Management (Gestión de Operaciones)

March – July 2025

Term VIII

Professor

Choy Pun, Augusto Carlos
Lizarzaburu Bolaños, Edmundo Raúl Antonio

I. General Course Information

Subject:	Gestión de Operaciones (Operations Management)		
Pre-requisite::	Planeamiento y Control de la Producción (Production Planning and Control)	**Code:**	02857
Precedent:	None	**Semester:**	2025-1
Credits::	3	**Term:**	VIII
Weekly Hours:	4	**Course type:**	In presence
Type Program(s)	Mandatory Industrial and Commercial Engineering	**Course Coordinator:**	Augusto Choy Pun achoy@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:

- Describe and contextualize quality in a given situation
- Identify quality frameworks, their components, and techniques in order to apply them in the implementation of quality and their metrics
- Use and interpret methods and tools for process control and improvement
- Identify and describe the management and leadership skills required for quality programs.
- The ability to apply knowledge of mathematics, science, and engineering in the solution of complex engineering problems.
- 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 his 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 addressed, so that he or she 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 your teacher.

ESAN students work effectively in diverse groups and teams to achieve tasks and goals. They 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) (60%), and Final evaluation (40%).

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.

AVERAGE PERMANENT EVALUATION 60%		
Type of evaluation	**Description**	**Weight %**
Class contribution	Involvement in discussions	15
Attendance	Attending class	5
Reading Controls (RC)	Two Reading Controls (5% each)	10
Tests (PC)	Three tests (5 marks each) eliminates the lowest	10
Essays with Presentation	Two research subjects (5 marks each)	10
Applied Integral Project	Two Team Deliverables (25 marks each)	50

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

$$PF = (0{,}60 \times PEP) + (0{,}40 \times EF)$$

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:** • 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		
1° March 17 - 22	**1. INTRODUCTION** 1. Operations Management (OM) 2. What is OM? 3. Organizing to Produce Goods and Services 4. Description of OM 5. What OM Managers do? 6. Operations for Goods and Services 7. The Productivity Challenge 8. Current Challenges in OM Heizer, J. (2020). pp 39-61, Ch. 1	**Presentation:** Course Methodology Guideline - review for Final Research Work Guideline - Review for UESAN written work presentation (APA Standards) Guideline - Effective Presentations **MiniCases:** - Hazel **Assignment:** Research subject GE1 due end of week 2
2° March 24 – 29	**2. Operations Strategy in a Global Environment** 1. Global View of Operations and Supply Chains 2. Developing Missions and Strategies 3. Achieving Competitive Advantage through Operations 4. Issues in Operations Strategy 5. Strategy Developing and Implementation 6. Strategic Planning,, Core competencies and Outsourcing Heizer, J. (2020). pp 67 92, Ch. 2	**Presentations:** - Operations Strategy - **MiniCases:** - Uber Technologies, Inc **Deliver:** Research subject GE1 due
3° March 31 - April 05	**3. TAKT TIME, CYCLE TIME AND LEAD TIME** 1. Takt Time 2. Standard Time 3. Cycle Time 4. Lead Time 5. OEE https://www.oee.com/calculating-oee/ Stevenson, W.J. (2021). pp. 244-298, Ch. 6	**Presentations:** - Standard Time Presentation **Exercises:** - Time calculation exercises **Assignment:** RC 1 due week 5 Heizer Ch 1, 2, 16 and Stevenson Ch 2 and 6

LEARNING UNIT II: PRODUCTIVITY AND COMPETITIVENESS **LEARNING OUTCOME:** • 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.		
WEEK	**CONTENTS**	**ACTIVITIES / EVALUATION**
4° April 07 - 12	**4. Productivity and Competitivity** 1. Definition of Productivity 2. Definition of Competitivity 3. What is Productivity and how is it Measured 4. Productivity Trends Stevenson, W.J. (2021). pp. 42-43; 56-62, Ch. 2	**Presentations:** - Productivity and Competition **MiniCases:** - How a Good Company Died
5° April 14 - 16	**5. LEAN** a. Lean Systems b. Lean Characteristics c. Benefits and Risks d. Principles e. Lean Product Design f. Lean Process Design g. Lean Manufacturing, Planning and Control Heizer, J. (2020). pp 673-696, Ch. 16	**Presentations:** - Lean Systems **Taking Stock** - Questions about Lean **Reading Control N°1** Heizer. *Operations Management* …, 12th Ed. Ch 1, 2, 16 Stevenson *Operations Management,* 12th Ed Ch 2 & 6
6° April 21 - 26	**6. LEAN TOOLS** 1. Lean Tools 2. Value Stream Mapping 3. Process Improvement through 5W2H 4. Lean and Six Sigma 5. JIT Delivery and the Supply Chain 6. Lean and ERP 7. Transition to Lean 8. Planning of a Successful Conversion 9. Conversion Obstacles 10. Cooperative Spirit 11. Lean Services 12. Operations Strategy 13. Kanban Stevenson, W.J. (2021). pp.617, 632-645, Ch. 14	**Presentations:** - Lean Tools **MiniCases:** - Arnold Palmer Hospital **Test 1:** LU I & II

<table>
<tr><th>WEEK</th><th>CONTENTS</th><th>ACTIVITIES / EVALUATION</th></tr>
<tr><td rowspan="2">7°

April 28 - May 03</td><td>7. PRODUCT DESIGN
a. Design of Goods and Services
b. Process Selection and Control
c. Manufacturing and Services
d. Product Development Continuum</td><td rowspan="2">Presentations:
- Product Design
MiniCases:
- De Mar’s Product Strategy
-
Deliver: Group Project 1 due</td></tr>
<tr><td>Heizer, J. (2020). pp 197-226 Ch. 5</td></tr>
<tr><td>8°

May 05 - 10</td><td>8. PROJECT 1st Presentation</td><td></td></tr>
<tr><td colspan="3">LEARNING UNIT III: 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.</td></tr>
<tr><td rowspan="2">9°

May 12 - 17</td><td>9. LOCATION STRATEGIES
1. Location and Capacity
2. Actors that affect location decisions
3. Methods of Evaluating Location Alternatives
4. Capacity and Constraint Management
5. Bottleneck Analysis
6. Break Even Analysis
7. Reducing Risk with Incremental Changes

Expected Monetary Value (EMV) to Capacity Decisions</td><td>Presentations: Lab Sessions
- Locartion Strategies
MiniCases:
- Rochester Manufacturing
Assignment:
Final Project Outlline</td></tr>
<tr><td>Heizer, J. (2020). pp 345-370, Ch.7</td><td></td></tr>
<tr><td rowspan="2">10°

May 19 - 24</td><td>10. MAINTENANCE AND RELIABILITY
1. The Strategic Importance of Maintenance and Reliability
2. Reliability & Loss Function
3. Maintenance
Total Productive Maintenance (TPM)</td><td>Presentations: Lab Sessions
- Maintenance and Reliability
Exercises:
- Maintenance Exercises
Test 2: LU III
MiniCases:
- Frito Lay
Assign RC 2 Heizer Ch 3, 5, 7, 9, 10 & 17
Week 13</td></tr>
<tr><td>Heizer, J. (2020). pp. 697-711, Ch.17</td><td></td></tr>
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WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT IV: ADVANCED TOPICS **LEARNING OUTCOME:** • Design effective plant layouts. • 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° May 26 - 31	**11. LAYOUT STRATEGIES** 1. The Strategic Importance of Layout Decisions 2. Types of Layout 3. Warehouse and Storage Layouts 4. Fixed Position Layout Process Oriented Layout	**Presentations:** - Layout Strategies **MiniCases:** - State Automobile License Renewal **Deliverable:** Theory Quiz 2 due **Assignment:** Research Subject GE2
	Heizer, J. (2020). pp. 405-439, Ch.9	
12° June 02 - 06	**12. Human Resources (HR), Job Design, and Work Measurement** 1. HR Strategy for Competitive Advantage 2. Labor Planning 3. Job design Ergonomics and the Work Environment	**Presentations:** - Job Design **MiniCases:** - Jackson Manufacturing Co.
	Heizer, J. (2020). pp. 445-474, Ch.10	
13° June 09 - 14	**13. MRP and ERP** 1. Dependent Demand 2. MRP Structure and Management 3. Lot Sizing 4. Extensions of MRP 5. ERP	**Presentations:** - Project Management **MiniCases:** - Mexican Crazy Quilt **Deliverable:** Research Subject GE2 due **Reading Control N°2** Heizer. *Operations Management* 12th Ed. Ch 3, 5, 7, 9, 10 & 17
	Heizer, J. (2020). pp. 601-632, Ch.14	
14° June 16 - 21	**14. Short Term Scheduling** 1. Scheduling Issues 2. Scheduling Process-Focused Facilities 3. Loading and Sequencing Jobs 4. Finite Capacity Scheduling 5. Scheduling Services	**Test 3:** LU IV
	Heizer, J. (2020). pp. 637-667, Ch. 15	

WEEK	CONTENTS	ACTIVITIES / EVALUATION
15° June 23 - 28	**15. COURSE REVIEW** **EXAM BRIEFING**	**Final Project Presentation** **Deliverable 2**
16° June 30 - July 05	**FINAL EXAMS**	

VIII. Bibliography

Mandatory Readings:

- Heizer, J. Render, B. & Munson, C. (2020). *Operations Management, Sustainability, and Supply Chain Management*. (12th Ed) Boston. Pearson.
- Stevenson, W.J. (2018). *Operations Management.* (13th Ed.) NY: McGraw Hill.
- Stevenson, W. J. (2021) *Operations Management*. (14th Ed.) NY McGraw-Hill
- James, T. (2011) *Operations Strategy.* (2011 Ed) Ventus Publishing ApS, BookBoon.com

Other Reading:

- Chase, R. (2014). *Administración de Operaciones: producción y cadena de suministros*. México: McGraw-Hill Educación. [TS155, C3A2, 2014]
- F. Robert Jacobs, Richard B. Chase (2022) *Operations and Supply Chain Management: The Core*-McGraw Hill (2022)

- **Other relevant books in ESAN Library:**

- Heizer, J. & Render, B. (2009). *Principios de Administración de Operaciones*. México: Pearson Educación. [TS155, H372O, 2009]
- 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 operacione*s-McGraw-Hill Interamericana de España (2014)

Research Ethics:

PLEASE NOTE: Internet searches will often take you to non-academic information resources. You may supplement your research with these sources, but keep in mind that the information you find there may not be accurate since it does not come under a formal oversight or peer-review process.

While you may use and cite non-academic resources such as Wikipedia when working on assignments, you may not rely on them exclusively. The majority of your sources should be peer-reviewed academic journals. Further, remember that you are responsible for the accuracy of any facts you present in your assignments and therefore should confirm the veracity of information you find on non-academic sources through further research.

IX. Profesores

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