



Course Syllabus Gestión de Operaciones (Operations Management)

August – December 2021

Term VIII

Choy Pun, Augusto Carlos

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:	Supply Chain Management	Semester:	2021-2
Credits:	3	Term:	VIII
Weekly Hours:	4 hours	Course type:	Remote- synchronous
Type de curso y Career(s)	Obligatory Industrial and Commercial Engineering	Course Coordinator:	Javier Del Carpio jdelcarpio@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, the students will:

- 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.
- Propose and select the most appropriate methodology to do the planning and location of services.
- 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.

- 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 stimulating the active participation of students, the teacher will fulfill his role as a guide, a mentor and motivator in the learning process. Teamwork will be combined to reinforce the learning process and develop in the participant the necessary skills 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.

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%), Mid-Term exam – (EP) (20%) and Final exam – (EF) (20%).

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

$$PF = (0,20 \times EP) + (0,60 \times PEP) + (0,20 \times EF)$$

Where:

PF	= Final Grade	Promedio Final
EP	= Mid-Term Exam	Examen Parcial
PEP	= Continuous Evaluation	Promedio de Evaluación Permanente
EF	= Final Exam	Examen Final

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

The Continuous Evaluation portion is calculated as follows:

AVERAGE PERMANENT EVALUATION (PEP) 60%		
Type of Evaluation	Description	Weight %
Class contribution	Involvement in discussions, attendance and punctuality	15
Attendance	Attendance and Punctuality	5
Reading Controls	Five quizzes (2% each)	10
Theory Quizzes	Three Theory Quizzes (5 marks each)	15
Application Quizzes (PC)	Four tests (5 marks each)	20
Essays with Presentation	Three research subjects (5 marks each)	15
Applied Integral Work	Four Team Deliverables (5 marks each)	20

VII. Programmed Content

WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT I (LU I): INTRODUCTION TO OPERATIONS MANAGEMENT AND ITS APPLICATION IN DIFFERENT SECTORS LEARNING OUTCOME: <ul style="list-style-type: none"> 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° Aug, 23rd – 29th	1. INTRODUCTION <ol style="list-style-type: none"> 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 Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. Pp 39-60, 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 1 due end of week 2

WEEK	CONTENTS	ACTIVITIES / EVALUATION
<p>2° Aug 30th Sep 05th</p>	<p>2. Operations Strategy in a Global Environment</p> <ol style="list-style-type: none"> 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 <p>Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i>. (12th Ed) Boston. Pearson. pp 67 96, Ch. 2</p>	<p>Presentations:</p> <ul style="list-style-type: none"> - Operations Strategy - <p>MiniCases:</p> <ul style="list-style-type: none"> - Uber Technologies, Inc <p>Deliver: Research subject 1 due</p> <p>Assignment: Theory paper 1 due end of week 4</p> <p>AUTOEVALUATION N°1 Heizer. <i>Operations Management</i> ..., 12th Ed. Ch 1 & 2</p>
<p>3° Sep 06th – 12th</p>	<p>3. TAKT TIME, CYCLE TIME AND LEAD TIME</p> <ol style="list-style-type: none"> 1. Takt Time 2. Standard Time 3. Cycle Time 4. Lead Time <p>Intro to Layout</p> <p>Stevenson, W.J. (2018). <i>Operations Management</i>. (13th Ed.) NY: Mc Graw Hill.. pp. 243-295, Ch. 6</p>	<p>Presentations:</p> <ul style="list-style-type: none"> - Standard Time Presentation <p>Exercises:</p> <ul style="list-style-type: none"> - Time calculation exercises <p>Assignment: Group Project Advance 1</p> <p>Test 1: LU I</p>
<p>LEARNING UNIT II: PRODUCTIVITY AND COMPETITIVENESS</p> <p>LEARNING OUTCOME:</p> <ul style="list-style-type: none"> • 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. 		
<p>4° Sep 13th – 19th</p>	<p>4. Productivity and Competitivity</p> <ol style="list-style-type: none"> 1. Definition of Productivity 2. Definition of Competitivity 3. What is Productivity and how is it Measured 4. Productivity Trends 	<p>Presentations:</p> <ul style="list-style-type: none"> - Productivity and Competition <p>MiniCases:</p> <ul style="list-style-type: none"> - How a Good Company Died <p>Theory Quiz 1:</p> <ul style="list-style-type: none"> - Article 1 due

WEEK	CONTENTS	ACTIVITIES / EVALUATION
5° Sep 20th – 26th	5. LEAN <ol style="list-style-type: none"> 1. Lean Systems 2. Lean Characteristics 3. Benefits and Risks 4. Principles 5. Lean Product Design 6. Lean Process Design 7. Lean Manufacturing, Planning and Control 	Presentations: <ul style="list-style-type: none"> - Lean Systems Taking Stock <ul style="list-style-type: none"> - Questions about Lean Deliverable: Group Project 1 due Assignment: Group Project Advance 2
	Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. pp 673-696, Ch. 16	AUTOEVALUATION N°2 Heizer. <i>Operations Management ...</i> , 12 th Ed. CH 16 Stevenson <i>Operations Management</i> , 12 th Ed Ch 6
6° Sep 27th Oct 03rd	6. LEAN TOOLS <ol style="list-style-type: none"> 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 	Presentations: <ul style="list-style-type: none"> - Lean Tools - MiniCases: <ul style="list-style-type: none"> - Arnold Palmer Hospital Assignment: Research Subject 2
7° Oct 04th – 10th	7. PRODUCT DESIGN <ol style="list-style-type: none"> 1. Design of Goods and Services 2. Process Selection and Control 3. Manufacturing and Services 4. Product Development Continuum 	Presentations: <ul style="list-style-type: none"> - Product Design MiniCases: <ul style="list-style-type: none"> - De Mar's Product Strategy - Deliver: Research Subject 2 due Test 2: LU II
	8. Mid-term Exam Briefing 9. Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. pp 197-224 Ch. 5	
8° Oct 11th – 17th	MID-TERM EXAMS	

WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT III: PLANT LOCATION AND SIZING LEARNING OUTCOME: <ul style="list-style-type: none"> 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. 		
9° Oct 18th – 24th	10. LOCATION STRATEGIES <ol style="list-style-type: none"> Location and Capacity Actors that affect location decisions Methods of Evaluating Location Alternatives Capacity and Constraint Management Bottleneck Analysis Break Even Analysis Reducing Risk with Incremental Changes Expected Monetary Value (EMV) to Capacity Decisions 	Presentations: Lab Sessions <ul style="list-style-type: none"> Location Strategies MiniCases: <ul style="list-style-type: none"> Rochester Manufacturing Assignment: Theory Quiz 2 Deliverable: Project Advance 2 AUTOEVALUATION N°3 Heizer. <i>Operations Management</i> ..., 12 th Ed. Ch 5 & 7
	Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. pp 317-339, Ch.7	
10° Oct 25th – 31st	11. MAINTENANCE AND RELIABILITY <ol style="list-style-type: none"> The Strategic Importance of Maintenance and Reliability Reliability Maintenance Total Productive Maintenance (TPM) 	Presentations: Lab Sessions <ul style="list-style-type: none"> Maintenance and Reliability Exercises: <ul style="list-style-type: none"> Maintenance Exercises MiniCases: <ul style="list-style-type: none"> Frito Lay Assignment: Post Project Advance 3 Test 3: LU III.
	Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. pp. 697-710, Ch.17	

WEEK	CONTENTS	ACTIVITIES / EVALUATION
LEARNING UNIT IV: ADVANCED TOPICS LEARNING OUTCOME: <ul style="list-style-type: none"> • 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° Nov 01st – 07th	12. LAYOUT STRATEGIES <ol style="list-style-type: none"> 1. The Strategic Importance of Layout Decisions 2. Types of Layout 3. Warehouse and Storage Layouts 4. Fixed Position Layout 5. Process Oriented Layout Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. pp. 405-434, Ch. 9	Presentations: <ul style="list-style-type: none"> - Layout Strategies MiniCases: <ul style="list-style-type: none"> - State Automobile License Renewal Deliverable: Theory Quiz 2 due Assignment: Research Subject 3 AUTOEVALUATION N°4 Heizer. <i>Operations Management</i> ..., 12 th Ed. CH 9
12° Nov 08th – 14th	13. Human Resources (HR), Job Design and Work Measurement <ol style="list-style-type: none"> 1. HR Strategy for Competitive Advantage 2. Labor Planning 3. Job design 4. Ergonomics and the Work Environment Heizer, J. Render, B. & Munson, C. (2020). <i>Operations Management, Sustainability and Supply Chain Management</i> . (12 th Ed) Boston. Pearson. pp. 445-471, Ch. 10	Presentations: <ul style="list-style-type: none"> - Job Design MiniCases: <ul style="list-style-type: none"> - Jackson Manufacturing Co. Deliverable: Project Advance 3 due Assignment: Post Project Advance 4
13° Nov 15th – 21st	14. Project Management <ol style="list-style-type: none"> 1. Project Cycle 2. Work Breakdown Structure 3. Gantt Charts 4. Pert and CPM Stevenson, W.J. (2018). <i>Operations Management</i> . (13 th Ed.) NY: Mc Graw Hill.. pp. 730-781, Ch. 17	Presentations: <ul style="list-style-type: none"> - Project Management MiniCases: <ul style="list-style-type: none"> - Mexican Crazy Quilt Deliverable: Research Subject 3 due Assignment: Post Theory Quiz 3 AUTOEVALUATION N°5 Heizer. <i>Operations Management</i> 12 th Ed. Ch 3, 10 & 17
14° Nov 22nd – 28th	Project Work	Deliverable 3 Test 4: LU IV Theory Quiz 3: Article 3
15° Nov 29th Dec 05th	COURSE REVIEW - EXAM BRIEFING	Final Project Presentation Deliverable 4
16° Dec 06th – 12th	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: Mc Graw 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]
- **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]

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. Lab Support

Not required.

X Professor

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