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Course Description: Operations Management

1- Basic Information:

Course Name	Operations Management
Course ID	OPM.22
Contact Hours (Synchronized Sessions)	28
Contact Hours with the tutor outside the Synchronized Sessions	17
Contact Hours (Registered Sessions)	130
Exam	
Registered Sessions Work Load	
Synchronized Session Work Load	
Credit Hours	7
Course Level	7

2- Pre-Requisites:

Course	ID
Principles Of Management	PCM.101

3- Course General Objectives:

Demonstrating efficiency and effectiveness while constantly improving product quality is the biggest challenge faced by manufacturing or service companies. While the pressures of the turbulent business environment vary across industries - and the strategies used to move forward despite those pressures as well - companies all have one fundamental thing in common: they manage processes within the company, an operational system. Everything is operation aim for operational excellence! The Operations Management course will give the tools to understand the components of a system (simple or complex), model their interactions and take action to correct what is not working properly. We will understand that a competitive company has a vision and a mission, broken down into operational strategies and objectives, which make it possible to orient the operational system and to use resources in the most efficient way possible. We will gradually integrate notions of inventory and supply chain management, value creation, the contribution of technology and more. Most importantly, we will see that achieving or maintaining a successful operating system requires constant adjustments, which involves measuring the achievement of objectives and correcting any discrepancies with the right combination of material and human resources and efficient processes,

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you can increase the productivity, competitiveness and profitability of our organization. In this course, students will understand the functions of operations management and apply techniques to ensure efficient and effective production of goods and services. This course introduces methods and concepts used to support the operations management function. The major problems of production management discussed in this course include production planning, production scheduling and control, forecasting, aggregate planning, scheduling, MRP & JIT, and recent advances in operations planning and control. We shall focus on the decision problems that confront operations managers. We will discuss commonly occurring application problems such as the development of a manufacturing and service strategy, capacity planning, quality management, and location analysis. For all problems, solution techniques will be presented. In addition, real and hypothetical practical cases of various previous topics will be presented.

4- Intended Learning Outcomes (ILO):

The Course Learning Outcomes are what you should be able to DO by the end of this course if you participate fully in learning activities and successfully complete the assessment items.

The student should demonstrate the necessary capabilities to carry out the following activities:

Code	Intended Learning Outcomes
ILO1	<i>Explain the role of operations management and identify operational and administrative processes, and discuss the key challenges posed in operations management.</i>
ILO2	<i>Accommodate the objectives of operations management and characterize how operations management meets the requirements of maximizing profits whilst minimizing costs.</i>
ILO3	<i>Understand the input–process–output framework, the extensions of it, examine the types of transformation processes occurring within operations, and apply them to a wide range of operations</i>
ILO4	<i>Be able to demonstrate the application of the process perspective on organizations and social phenomena more generally.</i>
ILO5	<i>Develop terminology, concepts, ideas, and tools to deal with production problems and issues in order to obtain a competitive advantage through operations.</i>
ILO6	<i>Identify the inefficiency and ineffectiveness in production and operations process, and propose the adequate changes or major redesigns to improve the process.</i>
ILO7	<i>Identify the roles and responsibilities of operations managers in different organizational contexts and the challenges they face</i>
ILO8	<i>Analyze processes using appropriate performance measures, such as flow time, productivity, and throughput in different situations in the process.</i>

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ILO9	<i>Describe the boundaries of an operations system, and recognize its interfaces with other functional areas within the organisation and with its external environment.</i>
ILO10	<i>To develop an understanding of how the operations, have strategic importance and can provide a competitive advantage in the workplace.</i>
ILO11	<i>To understand techniques of location and facility planning; line balancing; job designing; and capacity planning in operations management.</i>
ILO12	<i>Analyze and evaluate various facility alternatives and their capacity decisions, develop a balanced line of production & scheduling and sequencing techniques in operation environments</i>
ILO13	<i>Acquainted with the agile production method, concepts, tools and techniques, including the concepts of JIT in Toyota production system.</i>
ILO14	<i>Evaluate a number of frameworks in the design and delivery of products/services, and develop aggregate capacity plans and MPS in operation environments.</i>
ILO15	<i>Demonstrate how operations can achieve a “flow” of products and services that always delivers exactly what customers want, in exact quantities, exactly when needed, exactly where required, and at the lowest possible cost.</i>
ILO16	<i>Understand the theory and implementations of quality control activities for different industries.</i>
ILO17	<i>Explain how operations function within broader operations networks and supply chains, and assess the operational issues between a customer and supplier within the supply chain and competing supply chain</i>
ILO18	<i>Explain the general approaches to operations improvement, and introduce a number of specific improvement tools and techniques.</i>
ILO19	<i>Explain the fundamental methods of operations planning and control, including resource planning and control systems.</i>

5- Course Syllabus (24 hours of total Recorded Sessions, 24 hours of total synchronized sessions)

- **RS:** Recorded Sessions; **SS:** Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	Chapter One: Introduction to Operations Management 1.1. What is Operations Management? 1.2. Operations function and conversion processes 1.3. Why should you study operations	4	4	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	Read additional articles

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<p>management?</p> <p>1.4. Operations Management Evolution</p> <p>1.4.1. Artisanal manufacturing</p> <p>1.4.2. Mass production</p> <p>1.4.3. The modern era</p> <p>1.4.4. Production of goods and services</p> <p>1.5. Today's operations management environment</p> <p>1.6. Operations management in practice</p> <p>1.7. How does it all fit together within the Operations Department</p> <p>1.8. Managing operations across the organization</p> <p>1.9. Systems of operations and production in industrial plants</p> <p>1.9.1. System concept.</p> <p>1.9.2. Efficiency of production systems</p> <p>1.9.3. Production system and processes.</p> <p>1.10. Operations and production systems in service facilities</p> <p>1.10.1. System of operations and production in service facilities.</p> <p>1.10.2. Types of services and their impact on productive systems.</p> <p>1.10.3. Distinguishing characteristics of process and production systems in service facilities.</p> <p>1.11. The importance of production and operations management</p> <p>1.12. The goal of managing operations</p> <p>1.12.1. Operating performance targets</p> <p>1.13. Characteristics of productive operations management</p> <p>1.14. Concept of production and productivity</p>				
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	<p>1.14.1. Effectiveness and Efficiency</p> <p>1.14.2. The importance of productivity</p> <p>1.14.3. The importance of productivity at the organization level</p> <p>1.14.4. The importance of productivity at the national level</p> <p>1.14.5. Factors affecting productivity</p> <p>1.15. Productivity management course</p> <p>1.15.1. Productivity metrics and indicators</p> <p>1.15.2. Multifactorial productivity</p> <p>1.15.3. Partial or qualitative productivity</p> <p>1.15.4. Total or total productivity</p> <p>1.15.5. The elements for improving productivity</p> <p>1.16. Mission and Policy Operations</p> <p>1.17. Roles of operations management in the organization</p> <p>1.18. Operations management functions and responsibilities</p> <p>1.19. Operations Management Lifecycle Approach</p> <p>1.20. Process management problems</p> <p>1.21. Administrative positions for production and operations manager</p> <p>1.22. Practical case</p> <p>1.23. References Sources</p> <p>1.24. Chapter Questions</p>				
ILO2	<p><u>Chapter Two: Operations Strategy and Competitiveness</u></p> <p>2.1. Concept of strategy</p> <p>2.2. Strategy hierarchy</p> <p>2.3. Operations Strategies</p> <p>2.3.1. Concept and definition of</p>	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	Read additional articles

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	<p>operations strategy</p> <p>2.3.2. Strategy levels and patterns</p> <p>2.3.3. Strategic concerns</p> <p>2.3.4. Strategic roles Operations management</p> <p>2.3.5. Operations strategy models</p> <p>2.3.6. Characteristics of an operations strategy</p> <p>2.3.7. Requirements for temporal coordination and structural integration of operations</p> <p>2.3.8. Entrances to effective operations strategy</p> <p>2.4. Indicators for measuring the effectiveness of the operations strategy</p> <p>2.5. Perform operations</p> <p>2.6. Competition strategies between operations and production systems</p> <p>2.7. Competitiveness</p> <p>2.8. Competitive advantage and key purchasing criteria</p> <p>2.9. Ranking of qualifications versus ranking winners</p> <p>2.10. Competitive priorities</p> <p>2.11. Core competency (core capabilities)</p> <p>2.12. Identify core competencies</p> <p>2.13. Productivity</p> <p>2.14. Practical case</p> <p>2.15. References Sources</p> <p>2.16. Chapter Questions</p>				
ILO3	<p>Chapter Three: Production Capacity Planning Department and Strategic Capacity Planning</p> <p>3.1. The concept and definition of production capacity</p> <p>3.2. The main classifications of production capacity planning</p> <p>3.3. Decisions related to production capacity</p>	4	4	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	Read additional articles

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<p>3.4. Adjustment of production capacity</p> <p>3.5. Energy use rate</p> <p>3.6. Labor utilization rate</p> <p>3.7. Periodic time of delivery</p> <p>3.8. Cyclic manufacture time or flow time</p> <p>3.9. Manufacturing cycle efficiency</p> <p>3.10. Workload or load</p> <p>3.11. Work overload</p> <p>3.12. Low workload</p> <p>3.13. Production capacity</p> <p>3.14. Determinants of production capacity</p> <p>3.15. Types of production capacity</p> <p>3.15.1. Theoretical energy</p> <p>3.15.2. Technical or designer energy</p> <p>3.15.3. Maximum power</p> <p>3.15.4. Available production capacity</p> <p>3.15.5. Planned energy</p> <p>3.15.6. Possible energy</p> <p>3.15.7. Actual energy</p> <p>3.15.8. Normal energy</p> <p>3.15.9. Projected actual capacity</p> <p>3.15.10. Rated power</p> <p>3.15.11. Energy efficient</p> <p>3.15.12. Static energy</p> <p>3.15.13. Economic energy</p> <p>3.16. The importance of production capacity</p> <p>3.17. Adjustment of production capacity</p> <p>3.18. Bottlenecks or bottlenecks</p> <p>3.19. What are joint capabilities strategies?</p> <p>3.20. Calculate efficiency and usage metrics.</p> <p>3.21. Describe the factors that determine effective capacity.</p> <p>3.22. Steps in the capacity planning process.</p>				
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	<p>3.23. Determination of capacity in a sequential process</p> <p>3.24. Use breakeven analysis to assess capacitance alternatives.</p> <p>3.25. Ability to plan products and services</p> <p>3.26. Determine and measure capacity</p> <p>3.27. Determinants of effective power</p> <p>3.28. Capacity Alternatives Assessment</p> <p>3.29. Practical case</p> <p>3.30. References Sources</p> <p>3.31. Chapter Questions</p>				
ILO4	<p><u>Chapter Four: The location of the facility and the management of the organization and internal arrangement of the establishments</u></p> <p>4.1. Site analysis</p> <p>4.2. Site selection strategy</p> <p>4.3. Fit the site to the region</p> <p>4.4. The main factors in deciding on the location of the facility</p> <p>4.5. Ways to search for the best location for the facility</p> <p>4.6. Evaluate factors and make site decisions</p> <p>4.7. Site analysis techniques:</p> <p>4.7.1. Break-even point method,</p> <p>4.7.2. Point Classification Method, Central Gravity Method,</p> <p>4.7.3. Transportation methods</p> <p>4.7.4. Center of gravity method</p> <p>4.7.5. Loading distance method</p> <p>4.8. Wait line theory (single channel only)</p> <p>4.9. Basic facility planning concept</p> <p>4.10. Factory interior concept</p> <p>4.11. The need and importance of internal arrangement</p> <p>4.12. Objectives and advantages of internal arrangement</p>	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	<p>Read additional articles</p> <p>Solve additional exercises</p>

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	<p>4.13. The main types of internal arrangement of the site</p> <p>4.13.1. Ranking is based on product</p> <p>4.13.2. Ranking based on operations (functional)</p> <p>4.13.3. Ranking is based on the fixed location of the product</p> <p>4.13.4. The synthesis of the internal arrangement</p> <p>4.13.5. Modern forms of interior arrangement</p> <p>4.13.5.1. Manufacturing cells</p> <p>4.13.5.2. Flexible manufacturing systems</p> <p>4.14. The effect of the internal arrangement of the factory on the various activities in the factory</p> <p>4.15. Practical case</p> <p>4.16. References Sources</p> <p>4.17. Chapter Questions</p>				
ILO5	<p><u>Chapter Five: Demand Forecasting Management</u></p> <p>5.1. Prediction concept</p> <p>5.2. Trends in customer demand</p> <p>5.3. Forecast variables on demand</p> <p>5.4. General steps in the forecasting process</p> <p>5.5. Importance and applications of forecasting in production / operations management</p> <p>5.6. Forecast prospects</p> <p>5.7. Forecasting methods models</p> <p>5.7.1. Qualitative methods of forecasting</p> <p>5.7.1.1. Fast instant forecast</p> <p>5.7.1.2. Executive judgment (top to bottom)</p> <p>5.7.1.3. Sales team reviews</p>	4	4	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	<p>Read additional articles</p> <p>Solve additional exercises</p>

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	<p>(bottom to top)</p> <p>5.7.1.4. Prediction based on cross-effects analysis</p> <p>5.7.1.5. Delphi method</p> <p>5.7.1.6. Market surveys</p> <p>5.7.2. Quantitative methods of forecasting</p> <p>5.7.2.1. Causal (economic) prediction methods (degree)</p> <p>5.7.2.2. The method of least squares</p> <p>5.7.2.3. Exponential homogeneity</p> <p>5.7.2.4. Regression relationship</p> <p>5.7.2.5. The coefficient of determination</p> <p>5.7.3. Methods of time series analysis</p> <p>5.7.3.1. Simple moving average</p> <p>5.7.3.2. Weighted moving average</p> <p>5.8. Common prediction assumptions</p> <p>5.9. Demand patterns</p> <p>5.10. Forecast accuracy metrics</p> <p>5.11. Measurement of forecast errors</p> <p>5.12. Choose an appropriate forecasting method</p> <p>5.13. Application to different functional areas</p> <p>5.14. How Computers Help Predict</p> <p>5.15. Practical case</p> <p>5.16. References Sources</p> <p>5.17. Chapter Questions</p>				
ILO6	<p><u>Chapter Six: Supply Chain Management</u></p> <p>6.1. Managing key flows in the supply chain</p> <p>6.2. Foundational Elements of Supply</p>	4	4	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices	<p>Read additional articles</p> <p>Solve additional exercises</p>

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<p>Chain Management</p> <p>6.3. Supply Chain Distribution</p> <p>6.4. Implement supply chain management</p> <p>6.5. Supply Chain Design</p> <p>6.6. Logistics services</p> <p>6.7. Transportation</p> <p>6.7.1. Trucking</p> <p>6.7.2. Railroads</p> <p>6.7.3. Air Freight</p> <p>6.7.4. Waterway</p> <p>6.7.5. pipe lines</p> <p>6.7.6. Multimodal / multimodal shipping</p> <p>6.8. The role of inventory in the supply chain</p> <p>6.9. Stock and material management</p> <p>6.9.1. Inventory Concepts</p> <p>6.9.2. Reasons to keep inventory</p> <p>6.9.3. Inventory costs</p> <p>6.10. Inventory modeling</p> <p>6.10.1. Classic Inventory Form</p> <p>6.10.2. Continuous and periodic inventory systems</p> <p>6.10.3. Basic EOQ model (with and without discount)</p> <p>6.10.4. ABC inventory form</p> <p>6.10.5. Calculate stock order quantities</p> <p>6.10.6. Re-order point and optimum number of orders</p> <p>6.11. Distribution management</p> <p>6.11.1. Goods distribution</p> <p>6.12. Communication and technology in the supply chain</p> <p>6.12.1. EDI Electronic Data Interchange</p> <p>6.12.2. Barcode</p> <p>6.12.3. RFID radio frequency identification device</p> <p>6.13. Supply Chain Collaboration</p>			<input checked="" type="checkbox"/> Case study	
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	6.14. Collaborative Planning, Forecasting, and Renewal CPFR 6.15. VMI Vendor Managed Inventory 6.16. Supply chain performance metrics 6.17. SCM's Supply Chain Management within: OM how it all fit together 6.18. SCM across the organization 6.19. Trends in supply chain management 6.19.1. Socially responsible supply chain management 6.20. Practical case 6.21. References Sources 6.22. Chapter Questions				
ILO7	Chapter Seven: Just-in-Time JIT and Lean Production System 7.1. JIT just-in-time system philosophy 7.2. JIT Just-in-Time System Items 7.3. Just-in-time manufacturing JIT 7.4. JIT benefits 7.5. JIT implementation 7.5.1. JIT implementation in industries 7.5.2. JIT implementation in services 7.6. System Characteristics "Just In Time" 7.7. Supply chain issues 7.7.1. Procurement according to JIT 7.8. Disadvantages of JIT 7.9. Agile production system 7.10. Use lean production to improve flow and traction 7.11. Using lean production to master organizational processes 7.12. JIT and LEAN Systems for Operations Management: How Do They All Fit Together? 7.13. JIT and LEAN systems throughout the organization 7.14. The five practical steps for organizing a workplace	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	Read additional articles Solve additional exercises

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	7.15. The PDCA Course 7.16. Use of standard work to improve operations 7.17. Lean production strategies and tactics to eliminate waste 7.18. Use lean production to reduce waste and simplify the flow of value 7.19. Value-adding activities and value-adding activities 7.20. Practical case 7.21. References Sources 7.22. Chapter Questions				
ILO8	<u>Chapter Eight: Quality Management</u> 8.1. Definition of quality 8.2. Pioneers of quality 8.2.1. Walter Shewart (1891-1967) 8.2.2. Edwards Deming (1900-1993) 8.2.3. Joseph Goran (1904-2008) 8.2.4. Philip Crosby (1926-2001) 8.2.5. Armand Wegenbaum (1920-2014) 8.3. What is Statistical Quality Control? 8.4. Sources of difference: common and specific causes 8.5. Methods of controlling statistical processes 8.6. Quality improvement tools 8.6.1. Checklists 8.6.2. Map of cause and effect 8.6.3. Frequency distribution 8.6.4. Scatter map 8.6.5. Pareto analysis 8.6.6. Flow maps 8.6.7. Maps of statistical control of operations 8.7. Six Sigma quality 8.8. Sampling accept 8.9. Implications for managers	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	Read additional articles Solve additional exercises

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	<p>8.10. Statistical quality control in services</p> <p>8.11. Statistical Quality Control (SQC) in OM Operations Management</p> <p>8.12. Statistical Quality Control (SQC) throughout the organization</p> <p>8.13. Quality costs</p> <p>8.13.1. Prevention costs</p> <p>8.13.2. Evaluation costs</p> <p>8.13.3. Costs of internal failure</p> <p>8.13.4. External failure costs</p> <p>8.14. customers satisfaction</p> <p>8.15. Engage employees</p> <p>8.16. Practical case</p> <p>8.17. References Sources</p> <p>8.18. Chapter Questions</p>				
ILO9	<p><u>Chapter Nine: Resource Planning Technology and Operations Management</u></p> <p>9.1. Enterprise resource planning</p> <p>9.2. Evolution of the ERP system</p> <p>9.3. Benefits of ERP</p> <p>9.4. Cost of ERP systems</p> <p>9.5. Material planning systems</p> <p>9.6. Overview of MRP</p> <p>9.7. Types of demand</p> <p>9.8. MRP goals</p> <p>9.9. MRP input</p> <p>9.10. MRP Blast Process Manufacturing Systems: Evolution and Competitiveness</p> <p>9.11. Classification of process technology</p> <p>9.12. Computer Integrated Manufacturing (CIM)</p> <p>9.13. Computer Aided Design (CAD)</p> <p>9.14. Technology Group (GT)</p> <p>9.15. Computer Aided Operations Planning (CAPP)</p> <p>9.16. Robots</p> <p>9.17. Computer Aided Operations Planning (CAPP)</p>	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	<p>Read additional articles</p> <p>Solve additional exercises</p>

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	<p>9.18. Manufacturing planning and control system</p> <p>9.19. Advanced MRP systems</p> <p>1.20. Optimum Production Technology (OPT)</p> <p>9.21. Practical case</p> <p>9.22. References Sources</p> <p>9.23. Chapter Questions</p>				
ILO10	<p><u>Chapter Ten: Maintenance and Modernization Management</u></p> <p>10.1. Introduction to M & DC-TPM Productivity Total Maintenance</p> <p>10.2. The objectives of the comprehensive production maintenance system PQCDMS</p> <p>10.3. The main features of a comprehensive production maintenance system</p> <p>10.4. TPM Pillars</p> <p>10.5. Maintenance Management</p> <p>10.6. Basic approaches to maintenance</p> <p>10.6.1. Autonomous Maintenance</p> <p>10.6.2. Planned Maintenance</p> <p>10.6.3. Preventive and curative maintenance</p> <p>10.7. Means and goals of measuring maintenance</p> <p>10.8. Calculate reliability estimates</p> <p>10.9. Why usually fail comprehensive productive maintenance?</p> <p>10.10. The twelve steps to implement a comprehensive productive maintenance program</p> <p>10.11. Maintenance regulation and control</p> <p>10.12. Implement a comprehensive productive maintenance program</p> <p>10.13. The relationship between the comprehensive production maintenance</p>	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Case study	<p>Read additional articles</p> <p>Solve additional exercises</p>

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<p>program (TPM) and the comprehensive quality system (TQM)</p> <p>10.14. The impact of project conditions on the maintenance system</p> <p>10.15. Maintenance management and maintenance management systems on the computer</p> <p>10.16. Determine the methods of carrying out maintenance work according to the type of system to be maintained</p> <p>10.17. The six main losses according to the concept of comprehensive productive maintenance</p> <p>10.18. The benefits and positive results of implementing a comprehensive productive maintenance system</p> <p>10.19. Factors that determine the efficiency and effectiveness of maintenance</p> <p>10.20. A measure of performance efficiency</p> <p>10.21. Calculate the overall efficiency of the equipment</p> <p>10.22. Overall effectiveness of the equipment</p> <p>10.23. Losses in potency</p> <p>10.24. Measuring the development of the overall effectiveness of equipment and its essential components</p> <p>10.25. The relationship of the overall effectiveness of the equipment to the overall effectiveness of the performance of the equipment</p> <p>10.26. Some tools to improve the overall effectiveness of equipment</p> <p>10.27. Practical case</p> <p>10.28. References Sources</p> <p>10.29. Chapter Questions</p>				
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6-Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams	Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Work		

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	Explain the role of operations management and identify operational and administrative processes, and discuss the key challenges posed in operations management.	Depth and systematic understanding of knowledge in operation management.	✓				✓
ILO2	Accommodate the objectives of operations management and characterize how operations management meets the requirements of maximizing profits whilst minimizing costs.	Deep understanding of the objectives of operations management in organization areas, and merging theory with practice to achieve effectiveness in managing operations.	✓				✓
ILO3	Understand the input-process-output framework, the extensions of it, examine the types of transformation processes occurring within operations, and apply them to a wide range of operations	can undertake analysis of complex, incomplete or contradictory areas of knowledge communicating the outcome effectively	✓				✓

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ILO4	<i>Be able to demonstrate the application of the process perspective on organizations and social phenomena more generally.</i>	<i>can identify key areas of problems and choose appropriate tools / methods for their resolution in a considered manner, and ability to suggest changes to improve the process</i>	✓					✓
ILO5	<i>Develop terminology, concepts, ideas, and tools to deal with production problems and issues in order to obtain a competitive advantage through operations.</i>	<i>The ability to model production problems and the ability to solve them</i>	✓					✓
ILO6	<i>Identify the inefficiency and ineffectiveness in production and operations process, and propose the adequate changes or major redesigns to improve the process.</i>	<i>Demonstrate a level of conceptual understanding that will allow him critically to evaluate methodologies and argue alternative approaches</i>	✓					✓
ILO7	<i>Identify the roles and responsibilities of operations managers in different organizational contexts and the challenges they face</i>	<i>Shows originality in solving problems in organizational contexts.</i>	✓					✓
ILO8	<i>Analyze processes using appropriate performance measures, such as flow time, productivity, and throughput in different situations in the</i>	<i>The ability to model production problems and the ability to solve them</i>	✓					✓

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	<i>process.</i>							
ILO9	<i>Describe the boundaries of an operations system, and recognize its interfaces with other functional areas within the organisation and with its external environment.</i>	<i>Can act autonomously in planning and implementing tasks at a professional or equivalent level</i> Key / Transferable Skills	✓				✓	✓
ILO10	<i>To develop an understanding of how the operations, have strategic importance and can provide a competitive advantage in the workplace.</i>	<i>Understand the importance of operations strategy to gain competitive advantage</i>	✓	✓	✓			✓
ILO11	<i>To understand techniques of location and facility planning; line balancing; job designing; and capacity planning in operations management.</i>	<i>Ability to adjust site planning and process design.</i>	✓	✓	✓		✓	✓
ILO12	<i>Analyze and evaluate various facility alternatives and their capacity decisions, develop a balanced line of production & scheduling and sequencing techniques in operation environments</i>	<i>Ability to suggest changes and redesign to improve the process and ability to develop a productive plan and schedule it through a project or job.</i>	✓	✓	✓		✓	✓
ILO13	<i>Acquainted with the agile production method, concepts, tools and techniques, including the concepts of JIT in Toyota production system.</i>	<i>The ability of the student to distinguish the function of production and processes within</i>	✓	✓	✓		✓	✓

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		<i>the supply chain, and enables the student to link the concept of quality to production and processes</i>						
ILO14	<i>Evaluate a number of frameworks in the design and delivery of products/services, and develop aggregate capacity plans and MPS in operation environments.</i>	<i>Ability to design new products and amend production capacity plans</i>	✓	✓	✓	✓	✓	✓
ILO15	<i>Demonstrate how operations can achieve a “flow” of products and services that always delivers exactly what customers want, in exact quantities, exactly when needed, exactly where required, and at the lowest possible cost.</i>	<i>The ability to know and meet customers' requests.</i>	✓	✓	✓	✓	✓	✓
ILO16	<i>Understand the theory and implementations of quality control activities for different industries.</i>	<i>Link the concept of quality to production and processes, and clarify task and make appropriate use of the capacities of group members.</i>	✓				✓	✓
ILO17	<i>Explain how operations function within broader operations networks and supply chains, and assess the operational issues between a customer and supplier within the supply chain and competing supply chain</i>	<i>Explain the relationship of the production function and processes within the loops of the supply chain</i>					✓	✓
ILO18	<i>Explain the general approaches to operations improvement, and introduce a number of specific</i>	<i>Reflecting self-performance and others'</i>	✓				✓	✓

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	<i>improvement tools and techniques.</i>	<i>performance to improve operations.</i>					
ILO19	<i>Explain the fundamental methods of operations planning and control, including resource planning and control systems.</i>	<i>Adapt skills and design or develop new skills or procedures for new situations.</i>	✓			✓	✓

7- Practice Tools:

Tool Name	Description
ERP	Enterprise Resource Planning (ERP) Enterprise Resource Planning (ERP) is made of many business management software that share a common database making it easier to streamline workflows throughout the company.

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