



DEFENSE ACQUISITION UNIVERSITY
CME 130 - Surveillance Implications of Manufacturing
and Subcontractor Management

161001

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

1	Given a lecture, lesson materials, exercises, and class discussion, illustrate the PPC system's role in and impact on capacity needs.
	Contrast the roles of Production Planning and Control (PPC) systems across long, medium, and short-term timeframes.
	Describe PPC processes and activities across long, medium, and short-term timeframes.
	Differentiate between levels of a PPC schema.
	Given a scenario, categorize typical PPC responses to changes in technology, products, processes, or strategy.
2	Given a lecture, lesson materials, classroom discussion, Sales & Operations Planning (S&OP) exercises, and a case scenario, defend the S&OP plan based on <u>Aggregate Planning Strategies</u> .
	Interpret the Sales and Operations Planning (S&OP) process as part of the Production Planning and Control (PPC) system.
	Explain S&OP Integration.
	Explain key benefits of the S&OP Process.
	Demonstrate Aggregate Planning using Level and Chase strategies.
Analyze the pros/cons/differences of the Aggregate Planning strategies.	
3	Given a lecture, lesson materials, classroom discussion, demand forecasting exercises, and a case scenario, defend the demand forecast based on forecasting <u>techniques</u> .
	Contrast three types of demand forecasting methodologies.
	Given a scenario, analyze data using three forecasting techniques.
4	Given a lecture, lesson materials, classroom discussion, a Master Production Scheduling (MPS) exercise, and case scenario, present an MPS strategy that <u>employs the Rolling Through Time process and contains a bill of materials</u> .
	Distinguish the Master Production Scheduling (MPS) process as part of PPC.
	Describe the MPS Integration.
	Explain the key benefits of the MPS Process.
	Analyze pros/cons/differences of MPS Strategies.
	Given a scenario, demonstrate MPS using the rolling through time process.
	Explain a stable MPS and performance measures.
Explain the purpose of a Bill of Materials (BOM).	
5	Given a lecture, lesson materials, classroom discussion, and a Materials Requirements Planning (MRP) scenario, present the requirements of components on a <u>given end item using the MRP Record Table format</u> .
	Explain the Material Requirements Planning (MRP) process as part of PPC.
	Distinguish the three main sources of input to MRP.
	Contrast key benefits and drawbacks to MRP.
	Demonstrate the use of a time phased MRP record table.
Given a scenario, evaluate the MRP Records for all the components of a product.	
6	Given lesson materials and a classroom discussion about "The Goal," the students will analyze <u>a scenario to identify bottleneck resources and identify opportunities to improve throughput</u> .
	Define common Production Planning and Control (PPC) terms.
	Summarize the video, "The Goal."
	Given a scenario, analyze bottleneck resources and their effect on throughput.
Given a scenario, propose suggestions for improving throughput.	
7	Given a lecture, lesson materials and a classroom discussion compare the pros and cons of push and pull systems.
	Differentiate Push, Pull, and Hybrid systems.
	Demonstrate a Kanban system.
	Explain the function and benefits of a Base-stock Inventory policy.
8	Given a lecture, lesson materials and classroom exercises the students will analyze a lot-sizing/buffering <u>exercise and differentiate between the lot-size techniques and buffering categories</u> .
	Analyze various lot sizing techniques.
	Explain how buffering mitigates four categories of uncertainty.
	Differentiate the role of safety stock and safety lead time.
Interpret the relationship between set-up time and cyclic inventory levels.	



DEFENSE ACQUISITION UNIVERSITY

CME 130 - Surveillance Implications of Manufacturing and Subcontractor Management

161001

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

	Given a scenario, propose techniques to reduce changeover time.
9	Given a lecture, lesson materials, and classroom discussion, justify safety stock levels based on cost, levels of customer service, and risk.
	Specify the reasons for maintaining safety stock.
	Analyze the advantages and disadvantages of two customer service measures.
	Interpret a tradeoff curve correlating safety stock with customer service considerations.
10	Given a lecture, lesson materials, and classroom discussion, and a case scenario, predict order lead times for single and multiple suppliers.
	Estimate safety lead time for a supplier with a single item part.
	Deduce safety lead times for multiple suppliers with multiple items.
11	Given a lecture, lesson materials, and classroom exercises, students will justify the capacity requirements for a given scenario using both CRP and rough-cut techniques.
	Given a scenario, determine resource requirements with long lead times using long-range capacity planning.
	Contrast three rough-cut approaches to capacity planning: (1) Capacity Planning using Overall Factors (CPOF), (2) capacity bills, and (3) resource profiles
	Given a scenario, determine labor requirements using CPOF and capacity bills.
	Differentiate CRP and rough-cut techniques.
12	Given a scenario, determine the capacity requirement.
	Given a lecture, lesson materials, classroom discussion, and a Materials Requirements Planning (MRP) scenario, present the requirements of components on a given end-item using the MRP Record Table format.
	Contrast vertical loading vs. horizontal loading.
13	Given a scenario, evaluate input/output control.
	Given a lecture, lesson materials, classroom discussion, and a Materials Requirements Planning (MRP) scenario, present the requirements of components on a given end item using the MRP Record Table format.
	Given a scenario, apply job-shop scheduling rules to achieve optimal capacity.
14	Contrast common dispatching rules.
	Given a lecture, lesson materials, and classroom discussions, evaluate Materials Requirements Planning (MRP) process improvements for a given scenario.
	Explain the requirements for MRP success.
	Given a scenario, evaluate the likelihood of MRP success using appropriate metrics.
	Determine initiatives to improve MRP performance.
15	Given a scenario, evaluate inefficiencies and issues.
	Given a lecture, lesson materials, and classroom discussions, students will differentiate between traditional and modern philosophies of quality and apply them to the reduction of variation.
	Analyze variation in a Quality Assurance (QA) process to determine its impact on quality of products or services, efficiency, and cost.
	Contrast traditional vs. modern QA processes to highlight the importance of variation reduction.
16	Identify why 100% manual inspection is not an effective QA process.
	Contrast the philosophies of three quality gurus: Deming, Juran, and Crosby.
	Given a lecture, lesson materials, a case scenario, and classroom discussion, defend use of business statistics in supply chain management.
17	Interpret business statistics and related graphical representations.
	Interpret probability distributions and graphical representations.
	Evaluate business statistics for a given scenario.
	Given a lecture, lesson materials, a case scenario, and classroom discussion, defend use of Analytical Tools in a manufacturing environment.
18	Identify two methods of statistical sampling.
	Identify quality tools used in a manufacturing context.
	Contrast Process Capability (Cp) and the process capability index (Cpk) as measures of variation.
	Recognize the concepts from the Design of Experiments applied to process improvement.
18	Given lesson materials and a classroom discussion about "The Goal," students will analyze a scenario to identify bottleneck resources and identify opportunities to improve throughput.
	Contrast the roles and techniques of the Lean and Six Sigma methodologies.
	Evaluate a given scenario for opportunities for improving Quality, Productivity, and Cost.



DEFENSE ACQUISITION UNIVERSITY
CME 130 - Surveillance Implications of Manufacturing
and Subcontractor Management

161001

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

19	Provided with a lesson on the types of inventory and examples of each, students will analyze inventory-reduction methods for each of the five types of inventory.
	Identify the reasons why organizations carry inventory
	Identify the different types of inventory
	Relate the purpose(s) of each type of inventory and why it exists
	Identify the costs associated with inventory
	Identify the approaches used to reduce various types of inventory
20	Given a lecture, lesson materials, and classroom discussion, and a case scenario, predict order lead times for single and multiple suppliers.
	Assess the key factors influencing inventory management systems
	Identify the two categories of classical mathematical inventory models
	Determine the occasions for using a Single-Period Inventory Model
	Evaluate the cost of under-stocking(Cu), cost of overstocking (Co), service level (α), and order quantity (Q) for a one-time purchasing decision
21	Given a lesson, examples, an Economic Order Quantity (EOQ) calculator and problem-set calculations, interpret cost implications and order time for multiple suppliers and multiple purchasing decisions using the EOQ Model.
	Determine the occasions for using a fixed Economic Order Quantity (EOQ) model.
	Interpret the total cost of inventory for the EOQ from a given scenario.3.2
	Determine a reorder point.
22	Given a lesson, examples, exercises, and scenarios, justify strategic supplier management decisions to optimize supply chain management.
	Justify a make-or-buy decision for a given scenario-based on four sets of criteria.
	Contrast traditional with modern approaches to managing supplier relationships.
	Evaluate strategic outsourcing approaches for a given scenario.
	Determine when to use Commercial Off-the-Shelf (COTS) commodity parts vs. complex parts.
23	Given a lesson, examples, exercises, and scenarios, defend an inventory policy used to mitigate the bullwhip effect on the supply chain for a given scenario.
	Illustrate a single-product supply chain for a given scenario.
	Predict the impact of the bullwhip effect on a supply chain for a given scenario.
	Identify common causes of the bullwhip effect.
	Differentiate between installation and echelon inventory policies.
	Prepare a collaborative inventory policy among supply chain partners.
24	Given a lesson, examples, exercises, scenarios, and classroom discussion, defend the strategies that encourage partner cooperation, align contractor incentives, and maximize performance of the supply chain.
	Evaluate incentive conflicts on supply chain performance for a given scenario.
	Contrast types of contracts that resolve incentive conflicts.
25	Given a lesson, examples, exercise, scenarios, and classroom discussion, present a Pareto Analysis chart and ABC classification for causes of inventory problems in a given scenario.
	Identify the purpose of a Pareto analysis.
	Interpret a Pareto Chart to identify items requiring corrective or preventative action.
26	Provided with a lesson, examples, and problem sets, students will apply project management practices to DCMA-related goals.
	Differentiate between a process, project, and a program
	Differentiate between the five project management process groups
	Identify the types of constraints that may affect a project's success
	Name the types of scheduling tools project managers use to identify and track project activities
Interpret a network diagram from a given template to determine its critical path	



DEFENSE ACQUISITION UNIVERSITY
CME 130 - Surveillance Implications of Manufacturing
and Subcontractor Management

161001

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

	Evaluate if a given project is likely to finish on time
	Compare two types of schedule compression techniques
27	Given a lecture, lesson materials, and examples, evaluate the risks to a project by following the Department of Defense (DoD) risk management framework to identify and analyze risks; plan risk mitigation; implement the risk mitigation plan; and track risks.
	Differentiate between the six stages for conducting project risk management
	Identify the five key activities in the DoD risk management process
	Interpret a contractor's plan for conducting risk management activities on a project
	Score risks based on their likelihood of occurrence and their impact on cost, performance and schedule
	Select a mitigation strategy for reducing or eliminating a risk
28	Given a lecture, lesson materials, and scenario, propose an approach for evaluating a contractor's Risk Management Plan; including the techniques to identify risks, determining the probability and impact of risks, risk response strategies, and the process of monitoring risks.
	Discuss the importance of conducting risk management activities on a supply chain.
	Identify the nine types of supply chain risks and their drivers.
	Determine the types of actions to take for eliminating, reducing or mitigating supply chain risks.
	Analyze a risk to a project using a decision tree.