

MGNT 3430 (Dr. Simons) – Final Exam Learning Objectives

Chapter 1: Operations and Supply Chain Management

4. Identify and explain the essential differences between services and goods.
5. Identify the package of features that constitute a service.
7. Define and differentiate efficiency, effectiveness, and value.

Chapter 4: Strategic Capacity Management

4. Explain what economies and diseconomies of scale are and how they relate to each other.
7. Explain the idea of maintaining system balance when changing capacity.
9. Calculate capacity requirements, based on given forecasts and resource availability.

Chapter 6: Production Processes

3. Construct and explain the product-process matrix.
5. Describe the layouts associated with each of the five process types.
7. Demonstrate process analysis, to include the determination of capacity at each stage, balance, overall system capacity and cost per unit.

Chapter 11: Global Sourcing and Procurement

3. Explain the bullwhip effect in supply chains.
7. Identify and describe the four types of supply chains needed for different combinations of demand and supply uncertainty.
12. Demonstrate the calculation of inventory turnover and weeks of supply to measure sourcing performance.

Chapter 16: Sales and Operations Planning

3. Identify the purpose of the aggregate operations plan and the four variables it specifies to achieve that purpose.
5. Identify and describe the three primary production planning strategies.
7. Demonstrate how to construct and cost an aggregate production plan, using each type of strategy.

Chapter 17: Inventory Control

5. Differentiate fixed-quantity and fixed-period models.
6. Demonstrate the use of the EOQ model to determine fixed order quantities, reorder points, order cycles, and inventory costs.
7. Demonstrate the incorporation of safety stock to achieve a customer service target when demand is variable.

Chapter 18: Material Requirements Planning

3. Explain what a master schedule is and how it relates to the aggregate plan.
5. Describe the industry characteristics where MRP is most valuable.
6. Identify the three main inputs and two types of outputs for an MRP system. (Exhibit 18.4)

Chapter 19: Scheduling

3. Differentiate forward vs. backward scheduling.
6. Demonstrate the use of various priority rules to sequence jobs on one machine and calculate their performance on alternative performance measures.
9. Explain the basic idea of input-output control.

Chapter 13: Lean and Sustainable Supply Chains

5. Describe the circumstances for which JIT is most appropriate.
8. Describe how kanbans are used to implement pull production.
10. Explain the relationship between JIT and setup times.

Chapter 9: Six-Sigma Quality

1. Define the terms “Total Quality Management (TQM)”, “design quality”, “conformance quality”, and “six-sigma quality”.
2. Identify and define the six dimensions of design quality.
3. Differentiate the four costs of quality (COQ) and demonstrate a COQ analysis.
4. Identify the typical functions of a quality control department.
5. Calculate defects per million opportunities (DPMO).
6. Identify the five steps of the six-sigma methodology (DMAIC) and what should be accomplished in each step.
7. Identify and describe the various analytical tools of six-sigma, to include where in the DMAIC process they’re most useful.
8. Explain the idea of a Failure Mode and Effect Analysis (FMEA).
9. Differentiate the training and ability of the different “belt” levels in a six-sigma program.
10. In the context of a Shingo system, explain the difference and relationship between an error and a defect and differentiate the three types of inspection.
11. Define the term “poka-yoke” and give examples.
12. Identify what is signified by the different quality standards and differentiate the three forms of ISO certification.
13. Describe the idea and process of benchmarking.

Chapter 9A: Process Capability and SPC

1. Contrast the traditional view of the cost of variability with Taguchi’s view.
2. Calculate and interpret the process capability index (Cpk).
3. Define & differentiate common and assignable variation.
4. Explain the difference between a process being “capable” and being “in control.”
5. Describe the general method of statistical process control (SPC).
6. Identify the kinds of control chart evidence that merit investigation. (Exhibit 9A.4)
7. Differentiate attribute vs. variable data.
8. Demonstrate the use of p charts.
9. Demonstrate the use of c charts.
10. Demonstrate the use of X-bar and R charts.
11. Explain what acceptance sampling is, to include how it’s accomplished and the two risks involved.