



LAM FAMILY
COLLEGE *of* BUSINESS
SAN FRANCISCO STATE UNIVERSITY

San Francisco State University
Lam Family College of Business
Undergraduate Curriculum Committee

DS 412 – Operations Management
Undergraduate Curriculum Committee Course Outline

DS 412 - Course Outline

- I. **COURSE NUMBER AND TITLE:** DS412: Operations Management
- II. **COURSE DESCRIPTION:** DS412 (Operations Management) is a 3 unit class that entails the following: Management of manufacturing and service operations. Use of computer-based models. Use of computer-based models. Forecasting, capacity planning, linear programming, inventory management, quality management, and project management.
- III. **PREREQUISITES:** upper division standing and a C- or better in the following 3 classes or equivalents:
 - ✓ DS 110 or MATH 110 or MATH 108 or MATH 226 (Business Calculus)
 - ✓ DS 212 (Business Statistics)
 - ✓ ISYS 263 (Introduction to Computer Systems)
- IV. **LEARNING GOALS:** The purpose of this course is to introduce the student to the typical problems and topics associated with the management of manufacturing and service operations; the proper analysis of those problems; and their practical implications. The student should be able to:
 - A. Understand and apply the basic concepts of operations management to practical situations.
 - B. Use relevant quantitative techniques to analyze and solve operations management problems as follows:
 - B1) Recognize and justify the appropriate technique to apply.
 - B2) Execute the appropriate calculations competently.
 - B3) Interpret the result, considering whether it makes sense, and then communicate appropriate recommendations as appropriate to the business context.
 - C. Employ appropriate computer software to obtain solutions to operations management problems.

BSBA Learning Goals, as shown in [Appendix B](#), were significantly updated in September 2012. DS 412 supports updated learning goals 1 and 3 in our undergraduate business program, *i.e.*

 - ✓ 1(a) Students will demonstrate the discipline-based knowledge in economics, accounting, operations/statistics, finance, information systems, management, and marketing.
 - ✓ 3(a) Students will solve business problems using appropriate quantitative and analytical techniques and technologies;
 - ✓ 3(b) Students will demonstrate the ability to identify and analyze alternatives in a business context;
 - ✓ 3(c) Students will demonstrate the ability to interpret and articulate a solution.
- V. **EFFECTIVE DATE:** Fall 2016
- VI. **COURSE OBJECTIVES:** The purpose of this course is to introduce the student to the typical problems and topics associated with the management of manufacturing and service operations; the proper analysis of those problems; and their practical implications. The student should be able to:
 - A. Understand and apply the basic concepts of operations management to practical situations.
 - B. Use relevant quantitative techniques to analyze and solve operations management problems.
 - C. Employ appropriate computer software to obtain solutions to operations management problems.

V. COURSE CONTENT: (12 weeks)

- A. (1 week) A discussion of the operations management function in manufacturing and service organizations. Relationships with other business functions.
- B. (2 weeks) Business Forecasting. Basic components of a time series. Moving Average and Simple Exponential Smoothing models. Forecasting with trend and seasonality. Simple Linear Regression. Forecast errors. Spreadsheet applications.
- C. (1 week) Capacity Planning: Break Even Analysis. Evaluation of tradeoffs between fixed and variable costs, including in-house versus outsourced production.
- D. (2 weeks) Linear Programming. The standard LP problem. Problem formulation with applications. Solution with spreadsheets, and interpretation of results. Sensitivity analysis.
- E. (2 weeks) Inventory control. Types of inventory systems. The classical economic order quantity (EOQ) model, and extensions. Reorder points and lead times. Service levels and safety stock.
- F. (1 week) Project Scheduling. Project life cycle. AOA/AON precedence diagrams, Gantt charts. Critical path and slack. CPM and PERT models. Time/cost tradeoffs. Computer applications.
- G. (2 weeks) Quality Management. Costs of quality. Total Quality Management (TQM) systems, Benchmarking, ISO 9000 standards. Quality management tools. Statistical Process Control, control charts. Process capability. Six Sigma systems.
- H. (1 week) Optional topic(s) as selected from the following suggested list: Decision Theory, Supply Chain Management, Simulation, Facility Selection, Queuing and Service models.

VI. PREREQUISITE KNOWLEDGE: Students should have an understanding of: Spreadsheet usage and Elementary mathematics (including elementary differential calculus), probability theory, inferential statistics

VIII. TEACHING METHODS AND MATERIALS:

METHODS: Class lecture/discussion, problem solving, computer applications and simulation games, case analysis, and homework.

SAMPLE TEXTS: Heizer & Render, Operations Management 12th edition, Pearson, 2016

Reid and Sanders, Operations Management, Wiley, 2010

Stevenson, Production/Operations Management, McGraw-Hill, 2011

MATERIALS: Computers and software.

IX. GRADING: Exams and quizzes, homework, computer assignments and simulation games.