

660 Operations Management

Introduction

660 OPERATIONS MANAGEMENT explores the challenges encountered in the production of goods and services. To achieve and maintain competitive advantage, firms make tactical decisions about capacity planning, inventory control and quality control, as well as operational decisions concerning scheduling and maintenance. The subject presents various models and techniques that deal with these problems, to help students formulate appropriate operations strategies in a global economy.

Case studies

Real-life case studies are incorporated into the subject to provide opportunities for students to apply theory into practice in an authentic context. Examples of cases include

Hayes, R.
Alden Products, Inc.: European Manufacturing
 Case #9-697-099
 Harvard Business School Publishing
 7 December 1999

Kazuhiro, M.
Toyota Motor Manufacturing, USA, Inc.
 Case #9-693-019
 Harvard Business School Publishing
 5 September 1995

Rosenzweig, P.M..
International Sourcing in Athletic Footwear: Nike and Reebok
 Case #9-394-189
 Harvard Business School Publishing
 14 July 1994

Who should attend

- Executives wishing to enhance their understanding of the production systems of goods and services
- Managers with cross-functional and inter-departmental responsibilities
- Decision makers who need to formulate operational strategies involving the organisational activities of a business

Learning objectives

Upon completion of this subject, students should be able to

- explain the role of operations management in the overall framework of business administration
- apply the concepts and techniques of operations management to strategic and tactical business decisions
- appreciate recent and emerging theories of operations management, such as Just-in-Time, Kanban, theory of constraints and supply chain management
- formulate operations strategies in manufacturing and service industries to achieve a competitive edge

Delivery method

The subject is delivered online over a 12-week period, with an assigned Professor acting as mentor. The class will comprise students from different countries and industry backgrounds. Practical case studies and discussions help to stimulate learning and knowledge exchange, while an examination at the end of the subject will help students review and apply the knowledge and skills learnt.

Prerequisites

None

Assessment

Case analyses (team and individual)	45%
-------------------------------------	-----

Discussion board activities	30%
-----------------------------	-----

Final examination	25%
-------------------	-----

Syllabus

Segment 1: Introduction

Students are introduced to the syllabus, the resources and communication tools available within the course.

Segment 2: Strategic Decisions in Production and Operations Management

The segment examines the different types of manufacturing and service environments and their various operations strategies. Students are introduced to mathematical models of operational problems, using the *Solver* macro in Microsoft Excel. To stay competitive in the global economy, businesses must consider product design, process selection, capacity planning, facilities location and lay-out.

Segment 3: Operations Planning

For most businesses, operations planning begins with forecasting. Students learn how to select the appropriate forecasting method for different business situations. A number of forecasting models are presented, which facilitate aggregate planning and capacity planning. Scheduling methods are also discussed, introducing students to the benefits and challenges of lean manufacturing or 'just-in-time'.

Segment 4: Inventory Management, ERP, MRP and Supply Chain Management

The segment covers the topic of inventory management for both the independent and dependent demand environments. Independent demand occurs in retail businesses, for instance, where demand for different products is independent of one another. Dependent demand occurs in manufacturing companies where demand for the component parties is dependent on the demand for the final product. Statistical analyses of supply chains introduce the managerial aspects of material requirements planning (MRP) and enterprise resource planning (ERP).

Segment 5: Quality Control

The segment focuses on the total quality management (TQM) principles and covers two popular control techniques, namely, control charts and acceptance sampling. The concepts and application of process capability studies are presented, using statistical models. Students are familiarised with international quality awards, such as ISO certification, the Malcolm Baldrige Award, the European Quality Award and the Deming Prize for Quality.

Segment 6: Project Management

The segment is devoted to the concepts and techniques of project management. The business operations of a company are often a collection of projects, loosely related to one another. A project can be broken down into tasks, and precedence relationships among them can be determined. This preparation enables the scheduling of tasks and finding the project duration. Students learn how to apply the critical path method (CPM) and programme evaluation and review technique (PERT).

Segment 7: Operations Management in the Service Sector

Students learn about the concepts and techniques of services operations management. The segment looks at the design of services, the characteristics of service quality, yield management, inventory management and waiting time management in services. Students learn how to measure quality in services, allocate capacity among different customer segments and apply appropriate tools in making decisions about service design and development processes.

Required textbook

Gaither, N. and G. Frazier. *Operations Management* (9th ed). Ohio: South-Western, 2002.

Global Faculty

Subject Authors

Professor Jayavel Sounderpandian
University of Wisconsin-Parkside

Professor Anwar Ali
Management Development Institute

Subject Reviewer

Professor Habibullah Khan
U21Global

U21Global subjects are created by acknowledged experts in their field, usually senior academics who have strong understanding of postgraduate requirements. The subject content is further reviewed by academic specialists who appraise the subject from an independent perspective, ensuring a high-quality, professional product.

660 OPERATIONS MANAGEMENT was created for U21Global by **Jayavel Sounderpandian**, Professor of Quantitative Methods at the School of Business and Technology at the University of Wisconsin-Parkside, US and **Anwar Ali**, Professor of Operations Management at the Management Development Institute (MDI), Gurgaon, India. Dr Sounderpandian has taught operations management and business statistics since 1983. He has consulted for many businesses, including non-profit organisations like the US Naval Dental Research Institute. His teaching and research have garnered him several awards for excellence. Dr Anwar Ali's teaching and research interests are in business statistics, production planning, project management, productivity enhancement and materials and supply chain management. He has a PhD and a PGDM (MBA) from the Indian Institute of Management, Calcutta.

The subject was reviewed by **Habibullah Khan**, Professor and Associate Dean, Academic Programmes at U21Global. Prior to that, he taught at the Jahangirnagar University, Bangladesh. His research areas include development economics and policy analysis, social and cultural economics, economies of the Association of Southeast Asian Nations (ASEAN) and newly-industrialised economies, and the economics of tourism and recreation. He has consulted widely with international organisations, including the World Bank and the ASEAN Secretariat. Professor Khan holds a PhD in Economics from the University of New South Wales, Australia and an MA from Dhaka University, Bangladesh.

Professors

Students' progress will be guided by dedicated Professor Facilitators based around the world. They provide an international perspective and impart knowledge through a wealth of experience in their field of specialisation. Our Professor Facilitators will help students make sense of the information to enable students to transform the information into knowledge and creative solutions.



Yunus KATHAWALA

Yunus Kathawala is Professor at the School of Business, Eastern Illinois University, Charleston, Illinois, in the US, where he teaches Operations Management at the graduate and undergraduate level. Dr Kathawala served as Associate Chair of the School of Business (1997-1999) and Chair of the Department of Computer Science and Operations Management (1990-1997) at Eastern Illinois University. His research interests are responsive supply chains, knowledge management, quality issues in small business, and learning in the Internet economy. Dr Kathawala earned his PhD in Management Science/Operations Management from the University of Georgia.



Marianna SIGALA

Marianna Sigala is a Lecturer in Operations and Production Management at the Department of Business Administration, University of Aegean, Greece. She is also a Visiting Professor in Operations and Technology Management at the University of Fan S. Noli of Korca, Albania. She previously taught at the University of Strathclyde, Glasgow and the University of Westminster, London in the UK. She has published two books related to information and communications technologies applications and management. Dr Sigala earned her PhD in Technology Management and Operations Management from the University of Surrey, UK.