

# **OPR 311: Introduction to Operations Management**

*Credits: 3*

*Lecture Hours: 48*

## **Course Objective**

This course aims to impart the basic knowledge, tools and techniques of operations management to students.

## **Course Description**

Introduction to operations management. Operations strategy, Product and service design, Location decision and facility layout, linear programming , Aggregate planning , Inventory management and The quality system.

## **Course Details**

### **Unit 1: Introduction**

**LH 6**

Meaning ,definitions, and objectives; The transformation process; Differences between production and service operations; Scope of operations management; Operations and supporting functions; Role of the operations manager; Production system: Intermittent and continuous; Key issues for operations managers; Historical evolution of operations management; Productivity: concepts, types , factors affecting productivity; Productivity measurement, concept on green productivity; Supply chain management ( concept only).

### **Unit 2: Operations Strategy**

**LH 3**

Introduction to operations strategy; Operations strategy as a competitive weapon; Linkage between corporate, business and operations strategy; Components of operations strategy; Manufacturing strategies; Service strategies.

### **Unit 3: Product and Service Design**

**LH 5**

Concept on product and service design; Product development process; Difference between product and service design; Emerging issues in product and service design; Value analysis, concurrent engineering and quality function deployment; Waiting line theory (Single channel only).

### **Unit 4: Locations decision and Facilities layout**

**LH 5**

Reasons and Importance of location decisions; Factors affecting location decision of service, and manufacturing organizations; Techniques of location analysis: Qualitative and quantitative analysis; Concept on layout; Types of layout: Product layout , process layout , cellular layout , fixed position layout; Designing process layout.

### **Unit 5: Linear programming**

**LH 10**

Introduction to linear programming; Graphical and simplex method; Introduction to duality and sensitivity analysis by using solver; Assignment model (only minimization case); Transportation model (Only minimization case: excluding loop formation).

### **Unit 6: Aggregate planning**

**LH 4**

Concept on aggregate planning; Aggregate planning strategies; Planning options; Aggregate planning in services.

**Unit 7: Inventory Management****LH 4**

Concept and importance; Inventory costs; Dependent and independent demand; Inventory systems- continuous and periodical; Basic EOQ Model (with and without discount); ABC classification.

**Unit 8: The Quality System****LH 8**

Introduction to quality; Historical evolution of Total Quality Management; Definitions of quality; Philosophy, principles and concepts of Total quality management. Costs of quality; Quality Control: Introduction, objectives, advantages; Statistical process control -Control charts- control charts for variable and attributes; JIT and Six Sigma; Quality Management System: ISO 9000 series; 7 tools for the quality.

**Addendum:** At least one case will be administered at the end of each chapter. The students will also complete a project work and a few other assignments as specified by the faculty member.

Class Lecture = 45 hrs.

Tutorials = up to 15 hrs.

Assessment = 3 hrs.

**Reference Books:**

Adam and Ebert (2007), *Production and Operations Management*, Fifth Edition, New Delhi: Prentice-Hall of India Private Limited

Bajracharya P., Bajracharya S. and Maharjan B. (2007), *Production and Operations Management*, First Edition, Kathmandu: Quest Publication

Chase, Jacobs, Aquilano and Agrawal (2006), *Operations Management for Competitive Advantage*, Eleventh Edition, New Delhi: Tata McGraw-Hill Publishing Company Limited

Dahlgaard Jens. J, Kristensen K and Kanji G.K. (2002), *Fundamentals of Total Quality Management Process analysis and improvement*, London and New York: Taylor and Francis

Gaither and Frazier (2002), *Operations Management*, Ninth Edition, Singapore: Thomson Asia Pte Ltd.

Krajewski and Ritzman (2002), *Operations Management*, Sixth Edition, Delhi: Pearson Education (Singapore) Pte.Ltd

Manandhar, K.D. and Shrestha, K.N. (2000) *Production and Operations Management*, Kathmandu: Valley Publishers

Regmi, Joshi, Chaudhary and Fago (2003), *Production and Operations Management*, Second Edition, Kathmandu: Buddha Academic Enterprises Pvt.Ltd.

Shrestha, S. and Silwal, D. (2000), *Production and Operations Management*, Kathmandu: Taleju Prakashan

Stevenson W.J. (2014). *Operations Management*, Twelfth Edition, New York: McGraw-Hill Education

Sthapit, Yadav, Tamang, Dhital and Adhikari, (2007), *Production and Operations Management*, Second Edition, Kathmandu: Asmita Books Publishers & Distributors