

**RAFFLES UNIVERSITY**

**ALABBAR SCHOOL OF MANAGEMENT**

**Sub: Operations Management**

Semester: II (MBA- GEN)

No. of Credits: 6

Objective: The objective of this course is to provide the knowledge of production department and its operations in business.

Lecture. No	Name of the Topic	Remarks
<b>Unit - I: Introduction to Operations Management:</b> Introduction to Operations Management - - systems concept of production. Production Cycle - process technologies. Project, Job Shop, Assembly, batch and Continuous. Interface between the operation systems and systems of other functional areas.		
L-01	Introduction to Operations Management Definition of Operations Management	
L-02	Evolution of Operations Management	
L-03	The role of Operations Management in total business system	
L-04	Production Cycle	
L-05	Process Technologies: Project, Job Shop, Assembly, batch and Continuous flow	
L-06	Characteristics of process technologies	
L-07	Production Cycle Vs Process Cycle	
L-08	Interface between the operation systems and systems of other functional areas	
L-09	Overview of Unit-I	
<b>Unit – II: Production Management:</b> Production planning, Production control, Scheduling, Product sequencing: Sequencing of products with simple problems. Plant Capacity. Plant layout, Plant location. Maintenance Management: Objectives –Failure Concept, Reliability, Preventive and Breakdown maintenance.		
L-10	Production planning and Control ; Definition , Objectives	
L-11	Functions of Production planning	
L-12	Functions of production control	

L-13	Scheduling – definition and meaning	
L-14	Scheduling – objectives, Types of scheduling	
L-15	Product sequencing –theory , Johnson’s Rule	
L-16	Product sequencing – 2 machine and ‘n ‘job problems	
L-17	Product sequencing – ‘m’ machine and ‘n ‘job problems (multiproduct in multi-stage situations)	
L-18	Plant Capacity- Definition, Determinants of capacity	
L19	Plant layout – definition , objectives , characteristics of Ideal Layout	
L-20	Types of Layout – Product layout, and Mixed or combined layout	
L-21	Types of Layout – Process layout, and Fixed position layout	
L-22	Plant Location- definition, importance and factors influencing plant location	
L-23	Maintenance Management – Definition & Objectives	
L-24	Failure Concept, Reliability concept	
L-25	Types of maintenance systems : Preventive and Breakdown maintenance	
L-26	Overview of Unit-II	
<p><b>Unit - III: Quality Management:</b></p> <p>Standards and specifications, Quality Assurance and Quality Circles – Statistical Quality Control –Control Charts for Variables- Average, Range and S.D., Control charts for Attributes- fraction defective and number of defects.</p>		
L-27	Introduction to Quality Management Quality-Definition, importance	
L-28	Standards and specifications	
L-29	Quality Assurance	
L-30	Quality Circles	
L-31	Statistical Quality Control	
L-32	Control Charts for Variables- Average	
L-33	Control Charts for Variables- Range	
L-34	Control Charts for Variables- S.D	

L-35	Control charts for Attributes- fraction defective	
L-36	Control charts for Attributes- number of defects.	
L-37	Overview of Unit-III	
<b>Unit - IV: Productivity Improvement:</b>		
Acceptance Sampling, Work Study, Method Study, Work measurement, Computation of allowance and allowed time.		
L-38	Introduction to Productivity	
L-39	Acceptance Sampling – introduction, risks involved in acceptance sampling	
L-40	Types of Acceptance Sampling – attribute and variable	
L-41	Operating Characteristics (OC) Curve	
L-42	Work study – Introduction, definition and importance and procedure	
L-43	Method study – definition, procedure,	
L-44	Method study – Charts, diagrams and Therbligs	
L-45	Work measurement – definition, objectives , procedure	
L-46	Time study	
L-47	Computation of allowance and allowed time.	
L-48	Overview of Unit-IV	
<b>Unit - V: Inventory Management:</b>		
Stores Management – Requirements for efficient management of Stores, Safety stock, Economic order quantity, Inventory analysis methods - ABC, VED and FNSD analyses. Value Analysis.		
L-49	Stores management – meaning, stores department functions	
L-50	Requirements for efficient management of Stores- Stores layout and stores location	
L-51	Storing of materials – the bin card, the stores ledger, issuing of material, ,	
L-52	Replacement of materials – Re order level, physical verification of materials	
L-53	Safety stock	
L-54	Economic order quantity- introduction and importance	
L-55	Economic order quantity- Problems	

L-56	Economic order quantity- Problems	
L-57	Inventory analysis methods – ABC analysis	
L-58	Inventory analysis methods - VED and FNSD analyses	
L-59	Value Analysis – Definition, introduction	
L-60	Value engineering job plan	
L-61	Overview of Unit-V	

## **MBA: Semester-II**

### **Paper MGTM-206: OPERATIONS MANAGEMENT**

#### **Objective**

Production/operations management involves the integration of numerous activities and processes to produce products and services in a highly competitive global environment. Many companies have experienced a decline in market share as a result of their inability to compete on the basis of product design, cost or quality. Most now agree that world class performance in operations i.e., in product design, manufacturing, engineering and distribution, is essential for competitive success and long term survival.

#### **Curriculum**

##### **Unit-I: Introduction to Operations management**

Importance and functions of operation management, types of production system, facilities location, facilities layout and materials handling, Product design and process selection, Types of layout, Analysis and selection of layout-product and process layout, Computer integrated manufacturing system and line balancing ,

##### **Unit-II: Production planning and control,**

Introduction, functions aggregate planning and master production scheduling; materials requirement planning.BOM, capacity requirement planning, techniques, problems in MRP and CRP, business process reengineering, TPM ,method study & work measurement.

##### **Unit-III: Materials management**

Introduction, meaning, importance and functions; purchasing management; stores management and inventory management, types of inventory, inventory control systems-perpetual, periodic, JIT, KANBAN; quality assurance-six sigma concepts acceptance sampling, statistical quality control; quality movement, quality circles, ISO quality certification and types, maintenance management.

##### **Unit-IV: Operations Research**

Introduction, Linear programming –Graphical method ,Trans-shipment, Transportation problems, Assignment model, travelling salesman problems, PERT/CPM ,Inventory model-Game theory

##### **Unit-V: Logistics Management**

Introduction to logistics management, significance of logistics, Total distribution concepts, Integrated logistics, Materials handling packaging and transportation system.

*Case-special cases on Japanese manufacturing systems.*

#### **Recommended book**

1. Panneerselvam, Production and Operations Management, Prentice Hall of India, N. Delhi.

#### **Reference books**

1. Krajewski Lee J. & Ritman, Larry P.; Operations Management: Strategy & Analysis; 5<sup>th</sup> edition; Pearson Education; New Delhi; 1999.
2. Chase Richard B., Aquilano, Nicholas J, et al; Production & Operations Management Manufacturing & Services; 8th edition; Tata McGraw Hill., New Delhi; 1999.
3. Adam, Everett E. & Ebert, Ronald J.; Production and Operations Management: Concepts, Models and Behaviour; 5th edition; Prentice Hall of India Private Ltd., New Delhi.
4. Kaizen-[One Small Step Can Change Your Life: The Kaizen Way](#) by [Robert Maurer](#)

## QUESTION BANK

- 1.What is operations management and why is it critical to the success of any business?
- 2.How does effective operations management contribute to achieving a company's strategic objectives?
- 3.Describe the concept of supply chain management and its importance to operations management.How can businesses use process design and analysis to improve operational efficiency?
- 4.What role does technology play in modern operations management, particularly in terms of automation and data analytics?
- 5.Discuss the impact of globalization on operations management. What challenges and opportunities does it present?
- 6.How do quality management practices like Six Sigma and Lean Manufacturing improve operational performance?
- 7.Explain the significance of capacity planning in managing operational processes efficiently.
- 8.What are the key considerations in location planning and layout design for manufacturing and service operations?
- 9.How do inventory management techniques, such as JIT (Just-In-Time) and EOQ (Economic Order Quantity), optimize inventory levels and reduce costs?
- 10.Discuss the challenges and strategies of supply chain coordination and integration.How do operations managers assess and mitigate risks in the supply chain?
- 11.In what ways can sustainable operations management contribute to environmental conservation and social responsibility?
- 12.Describe the role of customer service operations in enhancing customer satisfaction and loyalty.
- 13.How does project management fit into the broader context of operations management?
- 14.What are the critical success factors for effective operations management in the e-commerce sector?
- 15.Discuss the role of artificial intelligence and machine learning in transforming operations management.
- 16.How can companies measure the performance of their operations management practices?
- 17.What metrics are commonly used?
- 18.What are the ethical considerations in operations management, especially in relation to labor practices and sourcing materials?

