

COURSE OUTLINE and SET OF COURSE

Course: OPERATIONS MANAGEMENT

Code/credits: ED 351 / 3 SKS

MANAGEMENT DEPARTMENT FACULTY OF ECONOMICS DIPONEGORO UNIVERSITY SEMARANG

COURSE OUTLINE

Course	:	OPERATIONS MANAGEMENT		
Code / Credit	:	EM 351/3 Credit		
Brief Description		The course discuss various aspect of Operations Management (OM) and its role in creating competitive advantage to win business competition		
General Instructional	T:	After completing the course student will able to explain basic concept dan describe the firm operation		
Objectives (GIO)		(manufacture and service)		

No	Specific Instructional Objectives (SIO)	Main Theme		Sub-Theme	Time Est.	References
1.	After completing the chapter, student should be able to explain the concept of Operations Management, the heritage of operations management, and the differences between goods and services		a. b. c. d.	Operations Management Heritage of OM Operation System Relation of operation function and other business function Differences between goods and services	150 min.	A. Heizer, Jay and Render, Barry, Operations Management, eight edition Prentice Hall, 2006 Chapter I page 1-12 B. Krajewski Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999 Chapter I page 1 - 10
2.	After completing the	Productivity and	a.	Productivity Definition	150	A. Chapter 1 page 12-18

	chapter, student should be able to explain the productivity and its measurements, and the OM challenges in globalisation	Operations strategy in globalization	 b. Productivity measurement c. Productivity Variables d. Productivity and the Service sector e. Ten strategic OM Decisions 	min.	Chapter II page 26 - 47 B. Chapter II page 10 -37
3.	After completing the chapter, student should be able to explain the product life cycle and design of goods and services	Design of Goods and Services and Reliability	 a. Product Life Cycle b. Generating New Products c. Product Development d. Issues for Product Design e. Service Design f. Product Reliability 	150 min	A. Chapter 5 hal 153-180 B. Chapter
4.	After completing the chapter, student should be able to explain four process of strategy	Process Strategy:	 Four Process Strategy: a. Process Focus b. Repetitive Focus c. Product Focus d. Mass customization e. Comparison of Process Choices - Service Process Design 	150 min	A. Chapter 7 page 249- 272 B. Chapter 3 page 87 - 110
5.	After completing the chapter, student should be able to explain the capacity planning and capacity consideration	Capacity Planning	 a. Capacity b. Design and Effective Capacity c. Capacity and Strategy d. Capacity consideration e. Managing Demand. f. Break Even Analysis. 	150 min	A. Supplement 7 page 282-295 B. Chapter 8 page 300-324
6	After completing the chapter, student should be able to explain the	Location Strategies	a. The strategic importance of locationb. Factors that affect location		A. Chapter 8 page 306- 325 B. Chapter 9 page 360-

	objective of location strategy and describe the method of solving the location problem		decisions 398 Method of Evaluating Location Alternatives Service Location Strategy	
7	After completing the chapter, student should be able to explain how to achieve a good layout for the process facilities	Layout Strategy	The strategic importance of layout decisions Types of layout Office layout Retail layout Warehousing and storage layouts Fixed position layout Process oriented layout Work cells A. Chapter 8 page 325 B. Chapter 10 page 452	
8	After completing the chapter, student should be able to explain the importance of quality and quality standard	Managing Quality	Defining quality Implication of Quality International Quality Standard 150 min 210 B. Chapter 6 page 242	
9	After completing the chapter, student should be able to explain the function of inventory and basic inventory models	Inventory Management	Function of Inventory Inventory Management Inventory Models for Independent Demand 150 A. Chapter 12 page 494 B. Chapter 13 page 552	
10	After completing the chapter, student should be able to explain the inventory models for independent demand	Inventory Models for Independent Demand	Economic Order Quantity (EOQ) EOQ with Quantity Discount EOQ with Poduction Rate A. Chapter 12 page B. Chapter 13 page 579	553 -

11	After completing the chapter, student should be able to explain aggregate planning strategies in manufacture as well as in service	Aggregate Planning	a. The nature of aggregate planning b. Aggregate planning strategies c. Method for aggregate planning d. Aggregate planning in service A. Chapter 13 page 504- B. Chapter 14 page 595 - 634
12	After completing the chapter, student should be able to explain the short-term scheduling	Short-term Scheduling	a. The strategic Importance of short-term scheduling b. Scheduling process-focused facilities c. Scheduling repetitive facilities d. Scheduling services A. Chapter 15 page 573- 596 B. Chapter 17 page 760- 793
13	After completing the chapter, student should be able to explain maintenance and reliability	Maintenance and Reliability	a. The strategic importance of Reliability and Maintenace min 655 b. Reliability c. Maintenace
14	After completing the chapter, student should be able to explain four ways of establishing labor standars	Work measurement	a. Labor standard and work measurement min b. Historical Experience c. Time Studies d. Predetermined Time Standards e. Work sampling A. Supplement 10 page 401-420 B.

Course

: OPERATIONS MANAGEMENT

Code of Course

: EM 351/3 Credit

Estimated times

: 1 x 3 x 50 minutes

Session

: 1

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the concept of Operations Management (OM), the heritage of OM, and the differences between goods and services

B. Main Theme: Overview of Operations Management and Role of OM in business

C. Sub-Theme:

- 1. Operations Management
- 2. Heritage of OM
- 3. Operation System
- 4. Relation of operation function and other business function
- 5. Differences between goods and services

Activities	Learning activities	Student activities	Media
Introduction	1. Explain the overview of	1. Listening	OHT, OHP &
	Operations Management 2	Taking note	whiteboard
•	2. Explain the benefit of	-	
	studying OM		
Presentation	1. Explain the definition of	1. Listening	OHT, OHP &
	OM and the benefit ?	Taking note	whiteboard
,	studying OM	3. Asking the	
ļ	2. Explain the heritage of	questions	
	OM		
	3. Explain the operation		
!	system, traditionally and		
!	in globalization		
	4. Explain the relation of		

	operation function and other business function 5. Explain the Differences between goods and services		
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

- 1. Why should one study OM?
- 2. Outlining the oppration system of the following activities:
- a. University
- b. Post office
- c. Restaurant

F. Task:

The class breaks into small groups. Each group is assigned to identify the operation system of manufacture and service activities.

- 1. Heizer, Jay and Render, Barry, Operations Management, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 2

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the productivity and its measurements, and the OM challenges in globalisation

B. Main Theme: Productivity and Operations strategy in globalization

C. Sub-Theme:

- 1. Productivity Definition
- 2. Productivity measurement
- 3. Productivity Variables
- 4. Productivity and the Service sector

Activities	Learning activities	Student activities	Media
Introduction	Explain the productivity challenge 3. Explain the definition of productivity	Listening Taking note	OHT, OHP & whiteboard
Presentation	Explain the Productivity measurement : single factor productivity and multifactor productivity Explain the productivity variables 3. Explain productivity and service sector		OHT, OHP & whiteboard
Summarizing	Summarize the chapter Discussion	Taking note 3. Discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

- 1. Name four areas that are significant to improving labor productivity?
- 2. What are the measurement problems that occur when one attempts to measure productivity
- 3. What are the five reasons why productivity is difficult to improve in the service sector?

F. Task:

The class breaks into small groups. Each group is assigned to measure productivity problems gven by the lecture

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 3

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the product life cycle and design of goods and services

B. Main Theme: Design of Goods and Services and Reliability

C. Sub-Theme:

- 1. Product Life Cycle
- 2. Generating New Products
- 3. Product Development
- 4. Issues for Product Design
- 5. Service Design
- 6. Product Reliability

Activities	Learning activities	Student activities	Media
Introduction	Explain the product strategy option support competitive advantage Explain the global company profile	Listening Taking note	OHT, OHP & whiteboard
Presentation	 Explain the product life cycle Explain the Generating New Products Explain the Product Development Explain the Issues for Product Design 	2. Taking note	OHT, OHP & whiteboard

; ;	5. Explain the Design	Service		
	6. Explain the Reliability	Product		THE PROPERTY OF THE PROPERTY O
Summarizing	Summarize chapter Discussion	the	 Taking note Discussion 	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

- 1. Why is it necessary to document a product explicitly?
- 2. What technique do we use to define a product?
- 3. In what ways is product strategy linked to product decision?

F. Task:

The class breaks into small groups. Each group dicuss the process of design of goods and services.

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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: EM 351/3 Credit

Estimated times

: 1 x 3 x 50 minutes

Session

: 4

A. Objectives:

General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain four process of strategy

B. Main Theme: Process Strategy

C. Sub-Theme:

- Four Process Strategy
 - 1. Process Focus
 - 2. Repetitive Focus
 - 3. Product Focus
 - 4. Mass customization
 - 5. Comparison of Process Choices
- Service Process Design

Activities	Learning activities	Student activities	Media
Introduction	1.Explain the global company	1. Listening	OHT, OHP &
	profile	2. Taking note	whiteboard
	2.Explain the process strategy		
Presentation	Explain the process focus	1. Listening	OHT, OHP &
	Explain the repetitive focus	2. Taking note	whiteboard
:	Explain the product focus	3. Discussion	
ļ į	Explain the mass		
	customization		
	Explain the comparison of		
	process choices		
	Explain the service process		
	design		

Summarizing	1. Summarize the	OHT, OHP &
!	chapter	whiteboard
	2. Giving question	
1 !	and/or discussion	

Giving an examination by choosing one or more of the following question:

- 1. What is process strategy?
- 2. What type of process is used for making each of the following products?
 - a. mineral water
 - b. wedding invitation
 - c. automobiles
 - d. paper

F. Task:

The class breaks into small groups. Each group discuss the implications of the process choose for some industries.

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 5

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the concept of Operations Management (OM), the heritage of OM, and the differences between goods and services

B. Main Theme: Capacity Planning

C. Sub-Theme:

- 1. Capacity
- 2. Design and Effective Capacity
- 3. Capacity and Strategy
- 4. Capacity consideration
- 5. Managing Demand
- 6. Break Even Analysis

Activities	Learning activities	Student activities	Media
Introduction	Explain the capacity strategy	Listening Taking note	OHT, OHP & whiteboard
Presentation	 Explain the definition of capacity Explain the heritage of OM Explain the operation system, traditionally and in globalization Explain the relation of 	2. Taking note	OHT, OHP & whiteboard

:	operation function and other business function 5. Explain the Differences between goods and services		
Summarizing	1.Summarize the chapter 2.Giving question and/or discussion	Listening Discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

- 1. Disitinguish betwee design capacity and effective capacity
- 2. Where does the manager obtain data for brek-even analysis?

F. Task:

The class breaks into small groups. Each group solve the assignment of capacity problem

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 6

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the objective of location strategy and describe the method of solving the location problem

B. Main Theme: Location Strategies

C. Sub-Theme:

- 1. The strategic importance of location
- 2. Factors that affect location decisions
- 3. Method of Evaluating Location Alternatives
- 4. Service Location Strategy

Activities	Learning activities	Student activities	Media
Introduction	Explain the strategic importance of location	Listening Taking note	OHT, OHP & whiteboard
Presentation	 Explain the factors that affect location decisions Explain the method of Evaluating location alternatives Explain the service location strategy 	Taking note	OHT, OHP & whiteboard
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

- 1. What are the advantage and disadvantages of qualitative approach to location decision?
- 2. What factors affect region/community location decision?

F. Task:

The class breaks into small groups. Each group assigned to discuss the location problems in the book.

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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: OPERATIONS MANAGEMENT

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: EM 351/3 Credit

Estimated times

: $1 \times 3 \times 50$ minutes

Session

: 7

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain how to achieve a good layout for the process facilities

B. Main Theme: Layout Strategy

C. Sub-Theme:

- 1. The strategic importance of layout decisions
- 2. Types of layout
- 3. Office layout
- 4. Retail layout
- 5. Warehousing and storage layouts
- 6. Fixed position layout
- 7. Process oriented layout
- 8. Work cells

Activities	Learning activities	Student activities	Media
Introduction	Explain the strategic importance of layout decision	Listening Taking note	OHT, OHP & whiteboard
Presentation	1.Explain the office layout 2.Explain the retail layout 3.Explain the warehousing layout 4.Explain the fixed position layout	Listening Taking note Asking the questions	OHT, OHP & whiteboard

; ; ;	5. Explain th process layout 6. Explain work cell		
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

1. What is the strategic of layout plnning?

F. Task:

The class breaks into small groups. Each group assigned to solve layout problems from the OM book

- 1 Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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: OPERATIONS MANAGEMENT

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Estimated times

: 1 x 3 x 50 minutes

Session

: 8

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the importance of quality and quality standard

B. Main Theme: Managing Quality

C. Sub-Theme:

1. Defining quality

2. Implication of Quality

3. International Quality Standard

Activities	Learning activities	Student activities	Media
Introduction	Explain the quality strategy	Listening Taking note	OHT, OHP & whiteboard
Presentation	Explain the definition of quality Explain the implication of quality Explain the international quality standar	Taking note	OHT, OHP & whiteboard
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

- 1. Explain how higher quality can lead to lower cost
- 2. How can a university control the quality of its output?

F. Task:

The class divides into small groups. Each group discuss the case of quality in OM books

- 1 Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 9

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the function of inventory and basic inventory models

B. Main Theme: Inventory management

C. Sub-Theme:

- 1. Function of Inventory
- 2. Inventory Management
- 3. Inventory Models for Independent Demand

Activities	Learning activities	Student activities	Media
Introduction	Explain the function of inventory	Listening Taking note	OHT, OHP & whiteboard
Presentation	Explain the inventory management: ABC Analysis, Record accuracy Explain cost of inventory Explain inventory models	Listening Taking note Asking the questions	OHT, OHP & whiteboard
Summarizing	1.Summarize the chapter 2.Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

F. Task:

The class divides into small groups. Each group solves the inventory problems from OM books

- 1 Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

Course : OPERATIONS MANAGEMENT

Code of Course : EM 351/3 Credit

Estimated times $: 1 \times 3 \times 50$ minutes

Session : 10

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the inventory models for independent demand

B. Main Theme: Inventory Models for Independent Demand

C. Sub-Theme:

- 1. Economic Order Quantity (EOQ)
- 2. EOQ with Quantity Discount
- 3. EOQ with Poduction Rate

Activities	Learning activities	Student activities	Media
Introduction	Explain the importance to determine optimum inventory	Listening Taking note	OHT, OHP & whiteboard
Presentation	1.Explain the EOQ 2.Explain the EOQ with quantity discount 3.Explain the EOQ with production rate	Listening Taking note Asking the questions	OHT, OHP & whiteboard
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

F. Task:

The class divides into small groups. Each group solves the inventory problems from OM books

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999

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Estimated times

: 1 x 3 x 50 minutes

Session

: 11

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain aggregate planning strategies in manufacture as well as in service

B. Main Theme: Aggregate Planning

C. Sub-Theme:

- 1. The nature of aggregate planning
- 2. Aggregate planning strategies
- 3. Method for aggregate planning
- 4. Aggregate planning in service

Activities	Learning activities	Student activities	Media
Introduction	Explain the nature of aggregate planning	Listening Taking note	OHT, OHP & whiteboard
Presentation	Explain the aggregate planning strategies Explain the method for aggregate planning Explain the aggregate planning in service	Listening Taking note Asking the questions	OHT, OHP & whiteboard
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

Giving an examination by choosing one or more of the following question:

F. Task:

The class divides into small groups. Each group

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 12

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain the short-term scheduling

B. Main Theme: Short-term Scheduling

C. Sub-Theme:

- 1. The strategic Importance of short-term scheduling
- 2. Scheduling process-focused facilities
- 3. Scheduling repetitive facilities
- 4. Scheduling services

Activities	Learning activities	Student activities	Media
Introduction	Explain the strategic	Listening	OHT, OHP &
	importance of short term	Taking note	whiteboard
!	scheduling		
Presentation	Explain the scheduling	Listening	OHT, OHP &
	process-focused facilities	Taking note	whiteboard
	Explain the Scheduling	Asking the questions	
:	repetitive facilities		
1	Explain the scheduling		
	services		
Summarizing	Summarize the chapter	Taking note	OHT, OHP &
	Giving question and/or	Discussion	whiteboard
	discussion		

Giving an examination by choosing one or more of the following question:

F. Task:

The class divides nto small groups. Each group assigned to solve scheduling problems

- 1 Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

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Estimated times

: 1 x 3 x 50 minutes

Session

: 13

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain maintenance and reliability

B. Main Theme: Maintenance and Reliability

C. Sub-Theme:

a. The strategic importance of Reliability and Maintenace

b. Reliability

Maintenace D. Learning Process:

Activities	Learning activities	Student activities	Media
Introduction	Explain the strategic importance of reliablity Explain the stratgeic importance of maintenance	Listening Taking note	OHT, OHP & whiteboard
Presentation	Explain the reliability Explain the maintenance	Listening Taking note Asking the questions	OHT, OHP & whiteboard
Summarizing		g note sion	OHT, OHP & whiteboard

E. Evaluation:

Giving an examination by choosing one or more of the following question:

F. Task:

The class divides into small groups. Each group assigned to solve maintenance and reliability problems in the OM books.

G. References:

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998

SET OF COURSE

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Estimated times

: 1 x 3 x 50 minutes

Session

: 14

A. Objectives:

1. General instructional objective:

After completing the course student will able to explain basic concept dan describe the firm operation (manufacture and service).

2. Specific instructional objective:

After completing the chapter, student should be able to explain four ways of establishing labor standars

B. Main Theme: Work Measurement

C. Sub-Theme:

- a. Labor standard and work measurement
- b. Historical Experience
- c. Time Studies
- d. Predetermined Time Standards
- e. Work sampling

D. Learning Process:

Activities	Learning activities	Student activities	Media
Introduction	Explain the strategy of work measurement	Listening Taking note	OHT, OHP & whiteboard
Presentation	Explain the labour standar Explain work measurement Explain time studies Explain the predetermined time standard Explain the work sampling	Listening Taking note Asking the questions	OHT, OHP & whiteboard
Summarizing	Summarize the chapter Giving question and/or discussion	Taking note discussion	OHT, OHP & whiteboard

E. Evaluation:

Giving an examination by choosing one or more of the following question:

F. Task:

The class breaks into small groups. Each group assigned to solve measurement problems from the OM books.

- 1. Heizer, Jay and Render, Barry, *Operations Management*, Eight Edition, Prentice Hall, 2006
- 2. Krajewski, Lee J. and Ritzman, Larry P, Operations Management Strategy and Analysis, fifth edition, Addison Wesley, 1999
- 3. Chase, Richard B., Aquilano, Nicholas J., and Jacobs, Robert F, *Production and Operations Management Manufacturing and Services*, Irwin McGraw-Hill, eight edition, 1998