INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad -500 043

MASTER OF BUSINESS ADMINISTRATION

COURSE DESCRIPTOR

Course Title	**PRODUCTION AND OPERATIONS MANAGEMENT**				
Course Code	CMBB07				
Programme	MBA				
Semester	II				
Course Type	Core				
Regulation	IARE - R18				
Course Structure	**Theory**			**Practical**	
	Lectures	**Tutorials**	**Credits**	**Laboratory**	**Credits**
	4		**4**	**-**	**-**
Chief Coordinator	Ms. E Sunitha, Assistant professor, MBA				
Course Faculty	Ms. E Sunitha, Assistant professor, MBA				

I. COURSE OVERVIEW:

This course is concerned with the management of resources and activities that produce and deliver goods and services for customers. Efficient and effective operations can provide an organization with major competitive advantages since the ability to respond to customer and market requirements quickly, at a low cost, and with high quality, is vital to attaining profitability and growth through increased market share. As competition becomes fiercer in an increasingly open and global marketplace, a company's survival and growth become greatly contingent on its ability to run its operations efficiently and to exploit its resources productively.

II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
PG	CMB005	I	Statistics For Management	3

III. MARKS DISTRIBUTION:

Subject	SEE Examination	CIA Examination	Total Marks
Production and Operations Management	70 Marks	30 Marks	100

IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✔	Chalk & Talk	✔	Quiz	✔	Assignments	✘	MOOCs
✔	LCD / PPT	✔	Seminars	✘	Mini Project	✔	Videos
✘	Open Ended Experiments						

V. EVALUATION METHODOLOGY:

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). Out of 30 marks allotted for CIA during the semester, marks are awarded by taking average of two CIA examinations or the marks scored in the make-up examination.

Semester End Examination (SEE): The SEE is conducted for 70 marks of 3 hours duration. The syllabus for the theory courses is divided into five units and each unit carries equal weightage in terms of marks distribution. The question paper pattern is as follows. Two full questions with "either" or "choice" will be drawn from each unit. Each question carries 14 marks. There could be a maximum of two sub divisions in a question.

The emphasis on the questions is broadly based on the following criteria:

50 %	To test the objectiveness of the concept.
50 %	To test the analytical skill of the concept OR to test the application skill of the concept.

Continuous Internal Assessment (CIA):
CIA is conducted for a total of 30 marks (Table 1), with 25 marks for Continuous Internal Examination (CIE), 05 marks for Alternative Assessment Tool (AAT).

Table 1: Assessment pattern for CIA

Component	**Theory**		**Total Marks**
Type of Assessment	CIE Exam	AAT	
CIA Marks	25	05	30

Continuous Internal Examination (CIE):
Two CIE exams shall be conducted at the end of the 8th and 16th week of the semester respectively. The CIE exam is conducted for 25 marks of 2 hours duration consisting of two parts. Part–A shall have five compulsory questions of one mark each. In part–B, four out of five questions have to be answered where, each question carries 5 marks. Marks are awarded by taking average of marks scored in two CIE exams.

Alternative Assessment Tool (AAT):
Alternative assessments shall be conducted twice in a semester consisting of seminars or assignments and Marks shall be awarded considering the average of two alternative assessments for every course. The AAT may include seminars and assignments.

VI. HOW PROGRAM OUTCOMES ARE ASSESSED:

Program Outcomes (POs)		Strength	Proficiency assessed by
PO 1	**Managerial Skills**: Apply knowledge of management theories and practices to solve business problems.	1	Lectures
PO 2	**Decision-making Skills**: Foster Analytical and critical thinking abilities for data based decision making.	2	Lectures/ Assignment
PO 7	**Strategic analysis**: Ability to conduct strategic analysis using theoretical and practical applications.	1	Seminars
PO 8	**Technology Skills**: Inculcate and develop technical skills to face the competitive world successfully.	2	Assignment

3 = High; 2 = Medium; 1 = Low

VII. COURSE OBJECTIVES:

The course should enable the students to:	
I	Understand the strategic role of operations management in creating and enhancing a firm's competitive advantages.
II	Analyze the key concepts, issues and different types of techniques of Operations Management in Both manufacturing and service organizations.
III	Know about the interdependence of the operations function with the other key functional areas of A firm.
IV	Apply analytical skills and problem-solving tools to the analysis of the operations problems.

VIII. COURSE OUTCOMES (CLOs):

CO Code	CO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
CMBB07:01	CO 1	Understand the role of operation system in total management system and its interface with other systems of functional areas	PO 1, PO 2	3
CMBB07:02	CO 2	Illustrate the different types of processes planning, process design, production planning and control in organizations.	PO 1, PO 2, PO 7, PO 8	2
CMBB07:03	CO 3	Describe the characteristics of process technologies and inter relationship between product life cycle and process life cycle.	PO 1 , PO 7, PO 8	2
CMBB07:04	CO 4	Explain aggregate planning, operating schedule and product sequencing.	PO 1, PO 2, PO 7, PO 8	3
CMBB07:05	CO 5	Describe plant location, plant layout and various types of plant layouts	PO 1	3
CMBB07:06	CO 6	Discuss the objectives, different types of maintenance system and replacement policies.	PO 2, PO 7, PO 8	2
CMBB07:07	CO 7	Examine the standards, specifications of quality control, quality control tools and techniques.	PO 1, PO 2, PO 7	3
CMBB07:08	CO 8	Determine different types of controlling measures for the products in organizations.	PO 2, PO 7, PO 8	2
CMBB07:09	CO 9	Examine the uses and different methods of work measurement, computation of allowance and allowed time.	PO 1, PO 2, PO 7	2

CO Code	CO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
CMBB07:10	CO 10	Describe the need, importance of material requirement planning and techniques for prioritization of materials.	PO 1, PO 2, PO 7	2
CMBB07:11	CO 11	Classify the sources of supply of materials, performance of suppliers, make or buy decisions under various circumstances vender rating.	PO 2, PO 7	3
CMBB07:12	CO 12	Discuss the objectives and requirements of stores management and different types of inventory.	PO7, PO 8	2
CMBB07:13	CO 13	Illustrate the different systems of inventory control like ABC, VED, FNSD analysis,	PO 1, PO 2, PO 7, PO 8	3
CMBB07:14	CO 14	Discuss the importance of Variance analysis in cost reduction, concepts and procedures.	PO 2, PO 7, PO 8	2

3 = High; 2 = Medium; 1 = Low

IX. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Outcomes	Program Outcome's							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CMBB07:01	3	1						
CMBB07:02	2	2					2	2
CMBB07:03	2						1	3
CMBB07:04	3	3					3	3
CMBB07:05	3							
CMBB07:06		2					1	2
CMBB07:07	3	3					2	
CMBB07:08		2					2	1
CMBB07:09	3	2					3	
CMBB07:10	3	2					2	
CMBB07:11		3					3	
CMBB07:12							2	2
CMBB07:13	3	3					3	2
CMBB07:14		2					1	2

3 = High; 2 = Medium; 1 = Low

X. ASSESSMENT METHODOLOGIES – DIRECT

CIE Exams	PO 1, PO 2, PO 7, PO 8	SEE Exams	PO 1, PO2, PO7 PO 8	Assignments	PO 1, PO2, PO7, PO 8	Seminars	PO 1, PO 2, PO7, PO 8
Laboratory Practices	-	Student Viva	-	Mini Project	-	Certification	-
Term Paper	-						

XI. ASSESSMENT METHODOLOGIES – INDIRECT

✔	Early Semester Feedback	✔	End Semester OBE Feedback
✘	Assessment of Mini Projects by Experts		

XII. SYLLABUS

UNIT -I	INTRODUCTION TO OPERATIONS MANAGEMENT
Introduction to operations management, role of operations management in total management system, and interface between the operation systems and systems of other functional areas, process planning and process design, production planning and control: basic functions of production planning and control, production cycle, characteristics of process technologies, project, job shop, assembly, batch and continuous, inter relationship between product life cycle and process life cycle.	
UNIT -II	**SCHEDULING AND CONTROL OF PRODUCTION OPERATIONS**
Aggregate planning, operations scheduling and product sequencing: sequencing of products in multi-product multi stage situations, plant capacity and line balancing. Plant layout, different types of layouts, location and the factors influencing location. Maintenance management: objectives, failure concept, reliability, preventive and breakdown maintenance, replacement policies.	
UNIT -III	**QUALITY CONTROL**
Standards and specifications, quality assurance and quality circles, statistical quality control: control charts for variables, average, range and standard deviation. Control charts for attributes, fraction defective and number of defects, acceptance sampling plans, curve work study. Various techniques in the methods study for identifying the most appropriate method; Work measurement, its uses and different methods, computation of allowance and allowed time	
UNIT -IV	**MATERIALS MANAGEMENT**
Need and importance of materials management-materials requirement planning materials budgeting-techniques for prioritization of materials-sources of supply of materials ,selection, evaluation and performance of suppliers make or buy decisions and its implications under various circumstances vendor rating , determinants of vendor rating, concept of waste management.	
UNIT -V	**STORES MANAGEMENT**
Objectives of stores management, requirements for efficient. Management of stores, safety stock inventory control, different systems of inventory control types of inventory. Costs systems of inventory control ABC, VED and FNSD analyses. Value analysis, importance in cost reduction, concepts and procedures	
Text Books:	
1. Aswathappa K. and Sridhara Bhat, "Production and Operations Management", 2010, HPH. 2. Stevenson J. William, "Operations Management", 2009, 9th Ed. Tata McGraw-Hill. 3. KanishkaBedi, "Production and Operations Management", 2007, 2nd Ed,Oxford University Press.	

Reference Books:
1. James R Evans, David A. Collier, "Operations Management", 2007, Cengage Learning 2. Upendra Kachru, "Production and Operations Management", 2010, Excel Books

XIII. COURSE PLAN:

The course plan is meant as a guideline. Probably there may be changes.

Lecture No	Topics to be covered	Course Outcomes (COs)	Reference
1-2	Describe the concept of Production and operations management	CO 1	T1,T2
3-4	Understand the use of different processes designs in manufacturing and production industries	CO 2	T2
5-6	Discuss the concept and its benefits and know about its functions and Identify the significance of production cycle in industries	CO 3	T3
7-8	Discuss different types of production	CO 3	T1,T3
9-11	Illustrate product life cycle and process life cycles	CO 3	T2
12-13	Understand the stages in sequencing of products	CO 4	T1
14-16	Understand the concepts of plant capacity and line balancing	CO 4	T2
17-18	Discuss different types of layouts in productions	CO 5	T3,T1
19-21	To acquire the knowledge of material management different types of maintenance	CO 6	T1
22-23	Analyze the quality control techniques	CO 7	T2
24-25	Evaluate the different types of graphs	CO 8	T3
26-27	Understand the concept of work study	CO 9	T3,T2
28-29	Understand the concept of method study	CO 9	T2
30-33	Analyze statistical control charts	CO 9	T1,T2
34-35	Describe materials management	CO 10	T2
36-37	Understand about the different techniques	CO 11	T3
28-29	Discuss about the selection of materials	CO 11	T1,T2
40	Understand about the make or buy concept	CO 11	T1
41	Discuss the concept of waste management	CO 12	T1,T2
42	Discuss the objectives of stores management	CO 12	T3
43	Understand the concept of safety stock inventory	CO 13	T1
44	Understand the Costs systems of inventory control.	CO 13	T1,T3
45	Understand the different concepts and procedures	CO 14	T1

XIV. GAPS IN THE SYLLABUS - TO MEET INDUSTRY / PROFESSION REQUIREMENTS:

S. no	Description	Proposed actions	Relevance with POs
1	Project evaluation techniques	Seminars	PO 1, PO 2, PO 7
2	Inventory controlling measures and also cost reduction techniques.	Seminars / Guest Lectures	PO 1, PO 2, PO 7

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