DEPARTMENT OF PRODUCTION TECHNOLOGY

MADRAS INSTITUTE OF TECHNOLOGY CAMPUS

ANNA UNIVERSITY : : CHENNAI – 600 044.

COURSE PLAN

COURSE DETAILS:

Degree	B.E.		
Programme Name	Production Engineering		
Course Code & Title	PR5074- Material Procurement Management		
Credits	3	**Session**	July 2023 – Dec 23
Course Type	Theory/ ~~Theory with Lab/ Lab~~	**Section**	6th semester
Name of the Faculty	**Mr.K.Tamilarasan** Teaching Fellow Department of Production Technology MIT, Anna University, Chennai – 600044.		

COURSE CONTENT:

Syllabus: (Approved Syllabus as per Regulation 2019)

OBJECTIVE:

- To understand the objectives and procedures of Purchasing.
- To remember the various aspects of stores management
- To apply the various concepts of inventory management
- To analyze management tools such as MRP, Aggregate planning, JIT concepts.
- To evaluate the usefulness of quantitative techniques in materials management.

UNIT I PURCHASING MANAGEMENT **9**

Introduction to materials management – objectives – organization — value analysis – make or buy decisions-Purchasing and procedures – Selection of sources of supply – Vendor development – Vendor evaluation and rating – Vendor rating methods- Imports – Buyer and Seller relationship.

UNIT II STORES MANAGEMENT **9**

Store function – Location – Layout – Stock taking – Materials handling Travel chart method– Transportation– Codification – Inventory pricing– warehousing –Logistics.

UNIT III BASIC INVENTORY MANAGEMENT **9**

Basic EOQ Models- Assumptions- Quantity discount model- Q system- P system- Reorder level- ABC analysis- Deterministic and Probabilistic models- Finite Production

UNIT IV ADVANCED INVENTORY MANAGEMENT **9**

Bill of Materials-Market Production Schedule requirements planning– Aggregate planning Aggregate planning strategies-Costs-Techniques-Tabulation method-Linear Programming Method – JIT- Lot size under constraints.

UNIT V O .R TECHNIQUES IN MATERIAL MANAGEMENT 9

Application of O.R. Techniques in Materials Management- Linear Programming – Distribution model- Replacement analysis- Scheduling – Forecasting-Forecasting techniques.

TOTAL: 45 PERIODS

COURSE OUTCOMES:

At the end of the course, students will be able to:

CO1: Identify the objectives and procedures of Purchasing.
CO2: Design the possible layout, selecting the appropriate equipment for material handling
CO3: Decide the correct inventory system for the given application
CO4: Develop suitable inventory management strategies
CO5: Select a suitable quantitative techniques for the particular situation

TEXT BOOKS:

1. Gopalakrishnan. P, "Purchasing and Material Management", Text and cases, Tata McGraw Hill, 1996.
2. Kesavan.R, Elanchezhian.C and VijayaRamnath.B, "Engineering Management", Eswar Press. 2005.

REFERENCES:

1. Gupta P.K. and Man Mohan, "Problems in Operations Research", Sultan chand and Sons, 2014.
2. Jhamb L.C," Inventory Management", Everest Publishing House, 2013.
3. Menan K.S and Sarikakulkarni, Purchasing and Inventory Management, Shross, 2011.
4. Stephan.N, Chapmen J.R and Tany Arnold, "Introduction to Materials Management", Pearson , 2017.
5. Nair N.K, "Purchasing and Materials Management", Vikas Publishing, 1990.

COURSE ARTICULATION MATRIX

PR7013 NON DESTRUCTIVE TESTING METHODS																
Course Outcome	Statement	Programme Outcomes												Programme Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	Identify the objectives and procedures of Purchasing.	1	-	1							1	-		1	1	1
CO2	Design the possible layout, selecting the appropriate equipment for material handling	1	1	1							1	1		1	1	1
CO3	Decide the correct inventory system for the given application	1	1	1							1	1		1	1	1
CO4	Develop suitable inventory management strategies	1	1	1							1	1		1	1	1
CO5	Select a suitable quantitative techniques for	1	1	1							1	1		1	1	1

	the particular situation															
PO & PSO (Average)		1	1	1							1	1		1	1	1

COURSE ALIGNED PROGRAMME OUTCOMES (PO) & PROGRAMME SPECIFIC OUTCOMES (PSO)

PO	Graduate Attribute	Programme Outcome
1	Engineering knowledge	Apply knowledge of mathematics, basic science and engineering science.
2	Problem analysis	Identify, formulate and solve engineering problems.
3	Design/development of solutions	Design a system or process to improve its performance, satisfying its constraints.
4	Conduct investigations of complex problems	Conduct experiments & collect, analyze and interpret the data.
5	Modern tool usage	Apply various tools and techniques to improve the efficiency of the system.
6	The Engineer and society	Conduct selves to uphold the professional and social obligations.
7	Environment and sustainability	Design the system with environment consciousness and sustainable development.
8	Ethics	Interacting industry, business and society in a professional and ethical manner.
9	Individual and team work	Function in a multidisciplinary team.
10	Communication	Proficiency in oral and written Communication.
11	Project management and finance	Implement cost effective and improved system.
12	Life-long learning	Continue professional development and learning as a life-long activity.

PSO	Graduates demonstrate
1	Knowledge on Production system: Familiarization of basic and advanced systems and practices.
2	Knowledge on design, analysis and development: Familiarization of system for Production processes, automation and quality systems.
3	Foundation of continuous improvement: Knowledge on application of appropriated materials, production processes and production system and development of an optimal solution to achieve continuous improvement to cater the needs of industry and society.

COURSE TENTATIVE SCHEDULE / PLAN

Week	Day	Date	Hrs	Unit	Topics	Text / Ref.	Pedagogy
1	Monday	22/01/2024	2	1	Introduction to materials management – objectives – organization	T1	Chalk /Talk
2	Thursaday	25/01/2024	1	1	value analysis – make or buy decisions	T2	Chalk /Talk

3	Monday	29/02/2024	2	1	Purchasing and procedures – Selection of sources of supply	T1	Chalk /Talk
4	Thursaday	01/02/2024	1	1	Vendor evaluation and rating – Vendor rating methods- Imports	T1	Quiz and Group Discussion
5	Monday	05/02/2024	2	1	Buyer and Seller relationship.	T1	Chalk /Talk
6	Thursaday	08/02/2024	1	2	Store function	T1	Chalk /Talk
7	Monday	12/02/2024	2	2	Location – Layout	T2	PPT Presentation
8	Thursaday	15/02/2024	1	2	Stock taking	T1	Chalk /Talk
9	Monday	19/02/2024	2	2	Materials handling Travel chart method	T2	Chalk /Tal
10	Thursaday	22/02/2024	1	2	Transportation– Codification	T1	Chalk /Talk
11	Monday	26/02/2024	2	2	Inventory pricing– warehousing – Logistics.	T1/T2	Chalk /Talk
12	Thursaday	29/02/2024	1	3	Basic EOQ Models- Assumptions- Quantity discount model	T1/T2	Chalk /Talk
13	Monday	01/03/2024	2	2	Q system- P system	T1	Chalk /Talk
14	Thursaday	05/03/2024	1	3	Reorder level	T1	Chalk /Talk
15	Monday	08/03/2024	2	3	ABC analysis- Deterministic and Probabilistic models	T1	Chalk /Talk
16	Thursaday	12/03/2024	1	3	Finite Production	T1	Chalk /Talk
17	Monday	15/03/2024	2	4	Bill of Materials-Market Production Schedule requirements planning	T1	Chalk /Talk
18	Thursaday	19/03/2024	1	4	Market Production Schedule requirements planning	T2	Chalk /Talk
19	Monday	22/03/2024	2	4	Aggregate planning Aggregate planning strategies	T2	PPT Presentation
20	Thursaday	26/03/2024	1	4	Aggregate planning Aggregate planning strategies	T2	PPT Presentation
21	Monday	29/03/2024	2	4	Costs-Techniques-Tabulation method-Linear Programming Method	T2	PPT Presentation
22	Thursaday	04/04/2024	1	4	JIT- Lot size under constraints	T2	Chalk /Talk
23	Monday	08/04/2024	2	5	Application of O.R. Techniques in Materials Management- Linear Programming.	T1/T2	Chalk /Talk
24	Thursaday	11/04/2024	1	5	Linear Programming	T1/T2	PPT Presentation
25	Monday	14/04/2024	2	5	Distribution model- Replacement analysis	T1/T2	PPT Presentation/ Quiz and Group Discussion
26	Thursaday	18/04/2024	1	5	Scheduling	T2	Chalk /Talk
27	Monday	21/04/2024	2	5	Forecasting	T2	Chalk /Talk
28	Thursaday	25/04/2024	1	5	Forecasting techniques	T2	Chalk /Talk

COURSE DELIVERY/INSTRUCTIONAL METHODOLOGIES:

✓ Chalk & Talk	✓ Stud. Assignments	✓ Web Resources
✓ LCD/~~Smart boards~~	✓ Stud. Seminars	☐ Add-On Courses

COURSE ASSESSMENT METHODOLOGIES-DIRECT

✓ University (End Semester) Examination		✓ Internal Assessment Tests	
✓ Assignments	☐ Laboratory Practices	☐ Mini/Major Projects	✓ Stud. Seminars
☐ Viva Voce	☐ Certifications	☐ Add-On Courses	☐ Others

COURSE ASSESSMENT METHODS

S.N.	Mode of Assessment	Date	Duration	% Weight
1	Internal Assessment Tests 1		1½ hr	25 %
2	Internal Assessment Tests 2		1½ hr	25 %
3.	University Examination		3 hr	50 %
	Additional marks may be given for Assignments / Group / Team Seminar Presentation)			

COURSE ASSESSMENT METHODOLOGIES-INDIRECT

✓ Assessment of CO (By Feedback, Once)	✓ Student Feedback On Faculty (Once)
☐ Assessment of Mini/Major projects by Ext. Experts	☐ Others

COURSE POLICY (Compensation Assessment)

1. Attending all the assessment is mandatory for every student
2. Course policy will be followed as per the academic course regulation

COURSE ACADEMIC DISHONESTY AND PLAGIARISM

1. All rules and regulation prescribed by the ACOE, University Departments, are applicable in the Internal Assessment Tests and University (End Semester) Examinations. (https://acoe.annauniv.edu/download_forms/student_forms/Guidelines.pdf)
2. In general, possessing a mobile phone, carrying bits of paper with materials, talking to other students, copying from other students during Internal Assessment Tests and University (End Semester) Examinations will be treated as Malpractice and punishable as per the rules and regulations. The misuse of Assignment / Project / Seminar works from others is considered as academic dishonesty and will be treated with the rules and regulations of the University.

COURSE ADDITIONAL INFORMATION

Queries / clarifications / discussion (if required) may be e-mailed to / contact the course instructors during their Office Hours.

For Approval		
6/8/24.		
Course Faculty	Professor Incharge	HOD (PT)