

India, 2005.

REFERENCES :

1. Stuart Russell, Peter Norvig, "Artificial Intelligence - A Modern Approach", 2nd ed., Prentice Hall India, 2008.
2. Kevin L. Priddy, Paul E. Keller, "Artificial Neural Networks An Introduction", Prentice Hall India, 2007.

IV Year I Semester	L	T	P	To	C
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MT 439 LEAN MANUFACTURING (ELECTIVE -IV)

Course Description & Objectives:

This course helps students understanding all good manufacturing and management practices for improving productivity of a typical manufacturing industry.

Course Outcomes:

On completion of this course, students would be able to:

1. *understand lean production and its importance*
2. *acquire knowledge about different processes for lean production*
3. *familiarize with TPM and employee involvement in industries*

UNIT I: Lean Production:

Introduction, background, lean thinking, Importance of lean production philosophy, strategy, culture, alignment, focus and systems view, Discussion of Toyota Production System.

UNIT II: Lean Production Processes:

Lean production preparation, System assessment, Process and value-stream mapping, Sources of waste, Lean production processes, Approaches and techniques.—Importance of focusing upon flow.

UNIT III: Lean Manufacturing Tools:

Workplace organization, 5S, Stability, Just-In-Time, One piece flow, Pull, Cellular systems, Quick change and set-up reduction methods.

UNIT IV: Total Productive Maintenance:

Poka-Yoke, mistake proofing, quality improvement, Standards, Leveling, Visual management.

UNIT V: Employee Involvement:

Teams, Training, Supporting and encouraging involvement, Involving people in the change process, communication, Importance of culture. **Case studies:** Startup of lean processes and examples of applications, Sustaining improvement and change, auditing, follow-up actions.

TEXT BOOKS:

1. Jeffrey Liker and David Meier, "The Toyota Way Field book", McGraw Hill, 2006.
2. Pascal Dennis, "Lean Production Simplified", Productivity Press, 2007.

REFERENCES:

1. James Womack and Daniel Jones, "Lean Thinking", Revised ed., Free Press, 2003

IV Year I Semester	L	T	P	To	C
	4	-	-	4	4

MT 441 DATABASE MANAGEMENT SYSTEMS (ELECTIVE - IV)

Course Description & Objectives:

This course strives to emphasize fundamentals of Database Management Systems, the relational model, ER diagrams, SQL. This course serves as fundamentals of Transaction Processing and Query Processing as well as Security Issues in Databases.

Course Outcomes:

At the end of the course, the student would be able to:

1. *design databases for applications.*
2. *use the relational model, er diagrams.*
3. *apply concurrency control and recovery mechanisms for practical problems.*
4. *design the query processor and transaction processor.*
5. *apply security concepts to databases.*

UNIT I: Introduction to DBMS:

File Systems Organization - Sequential, Pointer, Indexed, Direct - Purpose of Database System-Database System Terminologies-Database characteristics- Data models – Types of data models – Components of DBMS- Relational Algebra. LOGICAL DATABASE DESIGN: Relational DBMS - Codd's Rule - Entity-Relationship model - Extended ER Normalization – Functional Dependencies, Anomaly- 1NF to 5NF- Domain Key Normal Form – Denormalization

UNIT II: SQL & Query Optimization:

SQL Standards - Data types - Database Objects- DDL-DML-DCL-TCL- Embedded SQL-Static Vs Dynamic SQL - QUERY OPTIMIZATION: Query