Course code: Industrial Engineering & Management

Programme: B. Tech. (CSE/ECE/CCE/MME) Year: 2016 Semester: 7th

Course: Core/Other Credits: 3 Hours: 40

Course Context and Overview (100 words):

In the contemporary business scenario, competition is no longer between firms but between entire supply chains. Industrial Engineering and Management encompasses many important functions such as supplier and customer management, productivity and quality management, inventory and transportation management. Supply chain management (SCM) refers to integrated management of all those facilities that are engaged in satisfying customers' needs. OEMs world over, are keen to improve overall supply chain performance in order to improve operational performance and profits!

Prerequisites Courses: None

Course outcomes (COs):

On completion of this course, the students will have the ability to:	
CO1 : Understand and apply the industrial management concepts in production systems	Unit 1
CO2 : Manage inventory and transportation	Unit 2
CO3 : Manage quality and reliability	Unit 3
CO4 : Manage projects	Unit 4
CO5 : Manage supply chains	Unit 5

Course Topics:

Topics	**Lecture Hours**	
UNIT - I **1. Topic : Overview of Industrial Management**		
Introduction to Management and Industrial management, historical developments, significance and applications Production systems and productivity, measurement of productivity, types of industrial ownership, Time and motion study	8	Employability, Entrepreneurship
UNIT - II **2. Topic : Inventory & logistics management**	8	Employability, Entrepreneurship
Forecasting, Introduction to inventory, Types of inventory, Just-in-time, Inventory cost & basic economic order quantity models. Assignment and Transportation function, optimality test.		
UNIT - III **3. Topic : TQM, Reliability & Value engineering**		

Quality cost Quality gurus Quality control tools & statistical methods Reliability concepts Value engineering	8	Employability, Entrepreneurship
UNIT - IV **4. Topic : Project Management**	8	Employability, Entrepreneurship
Project management concepts Project organization and contracts Project planning and scheduling		
UNIT-V **5. Topic : Supply Chain Management**	8	Employability, Entrepreneurship
Material Requirement Planning, Enterprise Resource Planning, Purchasing function Decision phases of SCM, Process view Methodology for SC implementation		

Textbook references (IEEE format):
Text Book:

1. Richard Chase, Ravi Shankar, F. Robert Jacobs , Operations and supply chain management, Mc Graw Hill
2. Ravi Shankar, Industrial Engineering and Management, Galgotias publication, New Delhi
3. Dale H. Besterfield, Total quality management, Pearson Education

Reference books:

4. Chopra S., Meindl P. and Kalra D. V., Supply Chain Management: Strategy Planning and Operation, 4th edition, Pearson.
5. Logistics and supply chain management by Martin Christopher, FT Publishing International
6. Simchi-Levi D., Kaminsky P., Simchi-Levi E. and Ravi Shankar, Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies, Tata McGraw-Hill.
7. Chandrasekaran N., Supply Chain Management: Process, System and Practice, Oxford University Press
8. Project Management by K Nagarajan, New Age Publication
9. Alexis Leon, "ERP DEMYSTIFIED", Tata McGraw Hill.

Additional Resources (NPTEL, MIT Video Lectures, Web resources etc.):

http://nptel.ac.in/courses/110106045/

Evaluation Methods:

Item	Weightage
Teacher's assessment	20 %

(Project/case/assignment/quiz attendance etc.)	
Midterm	30 %
Final Examination	50 %

Prepared By: Course Instructor name: Dr. Vikram Sharma
Last Update: _March 15, 2016_____