GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Advance Manufacturing System (Branch Code - 50)

Year – II (Semester – III) (W.E.F. Jane 2013)

Major Elective-IV

3. Subject: Lean Manufacturing System and Implementation (735004)

Sr. No.	Course Content	Hours
1	**INTRODUCTION TO LEAN MANUFACTURING** Conventional Manufacturing versus Lean Manufacturing – Principles of Lean Manufacturing – Basic elements of lean manufacturing – Introduction to LM Tools.	10 Hrs.
2	**CELLULAR MANUFACTURING, JIT, TPM** Cellular Manufacturing – Types of Layout, Principles of Cell layout, Implementation. JIT-Principles of JIT and Implementation of Kanban. TPM – Pillars of TPM, Principles and implementation of TPM.	12 Hrs.
3	**SET UP TIME REDUCTION, TQM, 5S, VSM** Set up time reduction – Definition, philosophies and reduction approaches. TQM – Principles and implementation. 5S Principles and implementation - Value stream mapping - Procedure and principles.	12 Hrs.
4	**SIX SIGMA** Six Sigma – Definition, statistical considerations, variability reduction, design of experiments – Six Sigma implementation	12 Hrs.
5	**CASE STUDIES** Various case studies of implementation of lean manufacturing at industries.	10 Hrs.

Text Books:

1. N. Gopalkrishnan, Simplified Lean Manufacture, PHI Learning Private Limited. New Delhi
2. How to Implement Lean Manufacturing, Lonnie Wilson, McGraw Hill, August 2009.

Reference Books:

1. Design and Analysis of Lean Production Systems, Ronald G. Askin & Jeffrey B. Goldberg, John Wiley & Sons, 2003
2. William M. Feld , Lean Manufacturing: Tools, Techniques, and How to Use Them ,The st Lucie Press.
3. Rother M. and Shook J, 1999 'Learning to See: Value Stream Mapping to Add Value and Eliminate Muda' , Lean Enterprise Institute, Brookline, MA.
4. Mikell P. Groover (2002) 'Automation, Production Systems and CIM.