

OIM552 LEAN MANUFACTURING

DETAILED SYLLABUS

OBJECTIVES:

- To study the various tools for lean manufacturing (LM).
- To apply the above tools to implement LM system in an organization.

UNIT I INTRODUCTION TO LEAN MANUFACTURING

Conventional Manufacturing versus Lean Manufacturing – Principles of Lean Manufacturing – Basic elements of lean manufacturing – Introduction to LM Tools.

UNIT II 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.

UNIT III 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.

UNIT IV SIX SIGMA

Six Sigma – Definition, statistical considerations, variability reduction, design of experiments – Six Sigma implementation

UNIT V CASE STUDIES

Various case studies of implementation of lean manufacturing at industries.

OUTCOMES:

- The students will be able to identify waste in any process, reduce the waste using proper kaizens and other methods thereby improving the productivity of the organisation using LM tools.

REFERENCES:

1. Design and Analysis of Lean Production Systems, Ronald G. Askin & Jeffrey B. Goldberg, John Wiley & Sons, 2003
2. Mikell P. Groover (2002) __ Automation, Production Systems and CIM.
3. Rother M. and Shook J, 1999 __ Learning to See: Value Stream Mapping to Add Value and Eliminate Muda ‘, Lean Enterprise Institute, Brookline, MA.