

SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution) COIMBATORE-35.

^oAccredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME: 19AUZ405 – LEAN MANUFACTURING

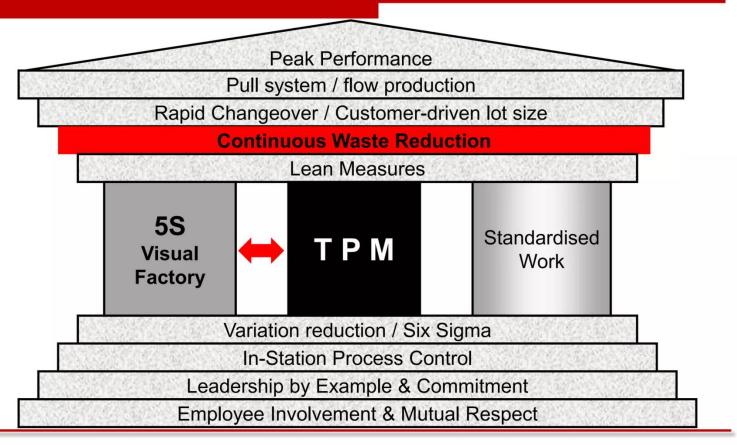
IV YEAR / VII SEMESTER

Topic – Implementation of TPM





Lean System









Current Challenges

Lack of innovation / new ideas & change management

Workforce lack skills, training, co-ordination, accountability, responsibility

Lack of growth potential

High Operational Costs

Huge Losses – high set up, breakdown, defects, adjustment, reduced speed, yield & productivity

Challenges

Lack and / or complicated production procedures

High numbers of component parts

Low-quality products & services

Work place – unsafe, dirty, & untidy

Badly designed, outmoded & many "bottleneck" processes





TPM

Total

All encompassing by maintenance and production individuals working together

- All employees are involved
- Aim to eliminate all accidents, defects and breakdowns

Productive

Production goods and services that meet or exceed customers' expectations

- Actions are performed while production goes on
- Production challenges are minimised

Maintenance

Keeping equipment and plant in as good as or better than the original conditions at all times

- Keep in good condition
- · Repair, clean, lubricate





TPM - What

Build quality into equipment maintenance

Company wide strategy for equipment, process improvement & a team based effort Plant improvement methodology

Continuous improvement of manufacturing process using tools of TQM

What

A Lean Tool to optimise the effectiveness of manufacturing equipment

Aka Autonomous
Maintenance, where users
take time to clean, inspect &
carry out basic maintenance
on their equipment.

Closed-loop measurement of results

Employee involvement, & empowerment





TPM - Why

Organisation

- Higher Overall Equipment Effectiveness
- Less "firefighting" to repair machines
- Lower operating costs
- Better able to meet commitments to customers
- Improved ability to compete in the world marketplace

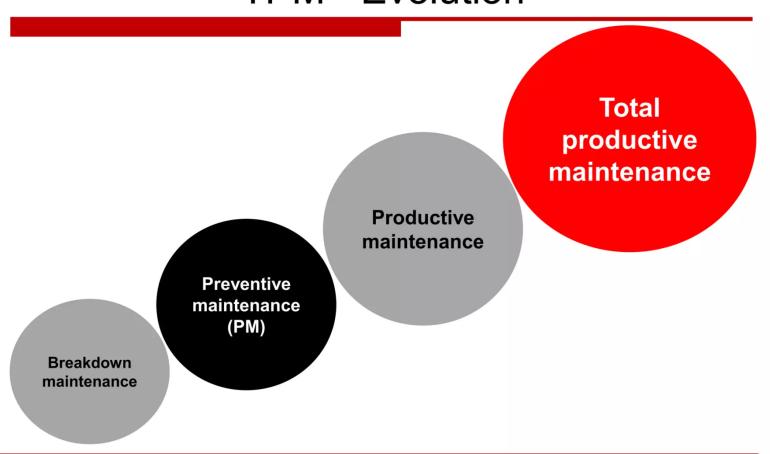
Employees

- Less pressure on maintenance for urgent repairs & on production to recover from breakdown losses
- Better cooperation between maintenance, production, and other departments
- Reduced chance of accidents
- Higher job satisfaction & improved job security





TPM - Evolution







TPM - Principles

Starts with 5S / Visual Factory Provide training to upgrade operations & maintenance skills

Involve everyone & utilise crossfunctional teamwork

Improve existing planned maintenance systems

Principles

Use Overall
Equipment
Effectiveness
(OEE) as a
compass for
success

Reduce life cycle cost

Complete elimination of the 'six major losses' while striving for a goal of zero unscheduled downtime





TPM - Goals

Encourage input from all employees

Obtain support and cooperation from top managers to all levels

Maintaining
Equipment for life
and Increase
production quality

Empower and increase job satisfaction

Goals

Use teams for continuous improvement

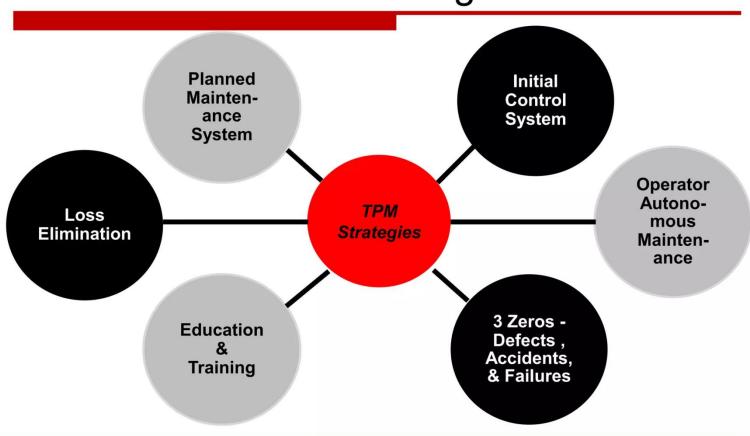
Bring together people from all departments concerned with equipment

Build a comprehensive plant maintenance system based on autonomous small group activities





TPM - Strategies







TPM - Benefits

Reduced emergency downtime

Increased equipment FPY (first pass yield) / FTT (first time through)

Engineers, technicians and managers trained in maintenance and quality Increased employee skill levels and employee empowerment

Benefits

Improved equipment design eliminates the root cause of defects

Improved capacity & higher productivity

Preventive
maintenance costs
reduced as
equipment
operators conduct
autonomous
maintenance

Increased return on investment





TPM – Measures

Short Term

- Establish an autonomous maintenance program for "x" machines
- Increase OEE by "y"% within for individual work centers

Long Term

 Reach a plant OEE of 85% within 3 years (world class is considered 85% +)







Thank You!