

Dr.Mahalingam College of Engineering & Technology, Pollachi-3

Department of Mechanical Engineering

Industry Attachment Program (IAP) with Sakthi Auto Component Limited

This Memorandum of Understanding (MoU) between MCET and Sakthi Auto Component Limited is signed with the objective of fostering resource development between the two institutions to promote academic, technological collaboration, R&D, Consultancy services, and Testing. Total 25 Students from second year Mechanical have undergone 40 hrs industrial attachment training from 21/02/2016 to 26/02/2016 (5 days). They were intensively trained in the areas of Foundry Section which include raw materials-inspection, Tooling and Methoding, Process Control etc. followed by training in the Machine Shop.

Industry Attachment Program (IAP) @ Sakthi Auto Component Limited





Industry Attachment Program (IAP) @ Sakthi Auto Component Limited

For the students pursuing Second year through Outcome Based Education (OBE) - Training Areas

FOUNDRY SECTION:

1. Raw materials- inspection
 - Specification fixation
 - Preparation of raw material manual- spec sheet
 - Testing methods
 - Approval process
2. Melting
 - Types of melting furnace
 - Charging of raw materials
 - Composition control
 - Tapping
3. Sand plant
 - Sand mixture
 - Sand preparation
 - Sand testing
 - Sand conveying
4. Tooling and Methoding
 - Understanding the industrial drawing
 - Generation of 3D model and casting model
 - Generation of pattern model and Core design
 - Gating simulation
- Pattern manufacturing
- Pattern proving
5. Core shop
 - Types of core making
 - Manufacturing of core dies
 - Core processing
 - Core handling
6. Moulding
 - Types of moulding machines
 - Moulding machine operation
 - Moulding process
 - Mould quality
7. Process control
 - Chemical composition control
 - Magnesium treatment
 - Pouring
 - Inoculation
 - Final composition
8. Metallurgy lab
 - Microstructure

- Mechanical properties
- Defect analysis

9. Fettling

- Degating
- Shot blasting
- Grinding/rough boring

10. Final inspection –casting inspection

- Visual inspection
- Hardness
- Xray
- MPI
- Ultrasonic testing (UT)

11. Rejection analysis and corrective action

- Types of defects
- Analysis of defects
- Corrective action

12. Phosphating and painting

- Phosphating
- Dip painting, spray painting,
- Powder coating
- ED coating
- Geomet coating

13. Customer requirements

- Drawing, standards and quality manua

MACHINE SHOP :

1. Receiving inspection

- Rough casting inspection
- Supplier part inspection
- Child part inspection

2. Machining

- Types of machining process
- CNC lathes
- Vertical Machining centres

- Horizontal machining centres
- Selection of machines

3. Jigs and fixture

- Design
- Manufacturing
- Error proof

4. Process development

- Understanding of customer drawings

- Geometrical dimensioning and tolerance
- Process selection
- Machine selection
- Process flow diagram (PFD)
- Fixture selection
- Cutting tool selection
- Process proving (cp, cpk)

5. Cutting tools

- Turning tools
- Rotating tools
- Types of inserts
- Tools mounting and interference
- Down time analysis and corrective action
- Dos and Donts

9. Industrial safety

- Introduction and importance of PPE

10. Quality systems and standards

- ISO and TS procedures
- EMS and OHSAS (Occupational Health and Safety Assessment Series) procedures

6. Inspection

- Plug, snap, go, No-go gauges
- Receiving gauges (qualifying)

7. Metrology

- Introduction to metrology
- Measurement techniques
- Handling Vernier, micrometer, bore gauge
- Basics of CMM
- Measurement using CMM, roundness, surface finish
- Calibration systems and instruments

8. Maintenance

- Types of maintenance
- 5s
- APQP
- PPAP
- FMEA
- SPC
- TPM
- National standards