

Greetings from CMTI

We are pleased to inform you that we are conducting a 02 days Non-Residential Training programme on "**Heat Treatment in Manufacturing Technology**", course code **0920**

Highlights / Overview of the Program:

Heat Treatment is a core manufacturing process carried out under controlled application of temperature and atmosphere to optimize certain physical and mechanical properties of metals/alloys. Heat treatment is an enabling process that improves product performance by increasing its strength or other desirable characteristics such as machinability, formability, ductility, etc. Heat treatment is an essential step in manufacturing process, typically performed at the end to ensure the desired product specifications are met. Its significance lies in its ability to meet design requirements while minimizing the risk of non-conformance or rejection which can prove costly in later stage of production. The process of heat treatment has a wide application in many industries such as Automobile & Auto Components, Dies & Mould, Machine Tools, Aerospace and General Engineering.

Target Participants:

Design Engineers, Production Engineers, Testing Engineers, Quality Engineers, Inspection engineers etc.

Programme Schedule

It is 02 days Non Residential Training Programme scheduled during **20th –21st January 2025**. The Programme will be held at Central Manufacturing Technology Institute, Bangalore

Participation Fees

Rs. 7,800/- plus GST @ 18%*, per participant. This includes Course Kit, working veg lunch, midsession tea.**

Course Fee can be paid through **NEFT / RTGS / Demand Draft**. Demand Draft to be drawn in favor of "Central Manufacturing Technology Institute", payable at Bangalore and should reach CMTI one week before the actual date of commencement of the course.

Beneficiary for RTGS/NEFT

- a) **Name : Central Manufacturing Technology Institute**
- b) **GST No: 29AAATC2085K1ZJ**
- c) **Account No :10521862015**
- d) **Bank Name & Branch: State Bank of India, Yeshwanthpur Branch**
- e) **IFSC Code :SBIN0003297**
- f) **MICR Code : 560002055**

Additional Information:

1. A 10% rebate on course fee will be given to organizations nominating 3 or more participants for each programme, only if payment is made in advance, ten days before the commencement of the course.
2. Individuals/ Companies interested in participation are requested to fill in the enclosed Enrollment Form and submit at the earliest.
3. Participants are advised to proceed for the programme only after the nominations / Programme confirmed by us (by Fax / Letter / Phone / E-Mail).
4. Participants should report at CMTI on the day of commencement of the course. Participants are advised to reach Bangalore the previous day evening/ night.
5. Course will be conducted from 09:00 to 17:00 hrs. Participants may plan their return journey accordingly.
6. Participants will be given Certificate after the completion of the Training Programme
7. Enclosed are the tentative programme contents for ready reference
8. GST No. to be shared while sending your nomination / Registration (If a company is exempted from GST they have to provide GST Exemption certificate).
9. Please note that Course fee once paid will not be refunded. However, change in nomination will be permitted.

Note: * Taxes and other levies will be charged as per the prevailing rates at the time of Billing**

For further enquiries / registration / nominations, please contact:
Mr. Arun Kumar J G, Joint Director & Centre Head – AEAMT,
09449842686 / 78 Fax: (080) 2337 0428
E-mail– training@cmti.res.in

Focus Areas:

- Fundamentals & Purpose
- Selection of materials based on Heat Treatment process
- Risk management in Heat Treatment process (FMEA)
- Design of Heat Treatment cycle based on the design requirement (Performance characteristics)
- Basic Heat Treatment Processes (Annealing, Normalizing, Hardening, Quenching, Tempering, Case Carburizing & Hardening, Case Nitriding, Sub-zero Treatment, Induction Hardening)
- Advance Techniques of Surface Heat Treatment
- Process Problems & Solutions
- Techniques of distortion control
- Successful drawing requirements
- General Quality plan of Heat Treatment for acceptance / rejection
- Industry Practices
- Understanding of case depth determination (Carburizing, Nitriding & Induction hardening particularly in case of components like gear, shafts plane & spline)
- Common failures & remedies

Key Take Aways:

- Learn about various heat treatment methods and specific applications of each process
- Develop Quality plan for critical heat-treated components
- Understand how to calculate and control case depth in surface hardening
- Understand common problems encountered in heat treatment and remedies