



Heat Treatment of Steels

What You'll Learn:

- How to efficiently heat treat steels
- What chemical changes take place and how to control surface changes
- Selection and operation of efficient heat treating equipment and controls
- The chemistry involved in controlling atmospheres
- When to use specific quenching processes
- How to improve the properties of components by reducing wear and increasing strength, toughness and fatigue life
- How to select steels for optimum results: why use low carbon steel vs. high carbon steel

Who Should Enroll:

- Anyone who needs a working understanding of heat treatment and its applications
- Technical, laboratory, and sales personnel
- Engineers
- Management, administrative and other non-technical support staff

Class Details:

- Duration: 1/26/12 – 3/22/12, once per week on Thursday
- Time: 4:30 – 6:30pm (CST)
- Location: East Peoria, MM2 Large Conference Room
- Cost: \$500 (Participant is responsible for fee)
- CEU's: 3.2
- Webex: Available

To Sign Up:

- Go to the Peoria Chapter ASM-AFS Website
 - <https://www.asm-afs-peoria.org/register.asp>
 - Title: "ASM MEI Heat Treatment of Steels"
- Register for the class (Note payment of \$500 is required upon registration)
 - Retain confirmation number in case changes to registration are needed
 - Retain receipt for work group reimbursement (if applicable)
- If paying by cash or check, send payment to Laura Ligeski.
 - *Interoffice Mail:*
 - Facility Code - 16
 - Mail Drop Code – EPMM7650
 - Dept. – MM2

Check Payable to:
Peoria Chapter of ASM

More Info:

- For more information, contact:
 - **Emily Merrick** – ASM/MEI Co-Chair
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 - **Laura Ligeski** – ASM/MEI Co-Chair
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Sign Up Deadline: January 19, 2012



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Course Overview:

- Heat treating fundamentals
- Practical heat treating of ferrous material
- Latest heat treat processing technology
 - atmosphere control
 - temperature control
 - quenching
- Heat treat equipment design and application

Course Instructors:

- Gary Keil – Caterpillar Engineering Fellow
- Mike Pershing – Senior Engineering Technical Steward
- Tom Clements – Engineering Manager
- Randy Conklen – Engineering Supervisor
- Patrick Zhao – 6 Sigma Black Belt

Course Outline:

1. Steel and Its Mechanical Properties
2. Microstructure and Mechanical Properties
3. Austenite and Its Transformation and Classification of Steels
4. Annealing and Normalizing Steel
5. Hardening of Steel
6. Quenching of Media and Equipment
7. Tempering of Steel
8. Types and Construction of Heat Treating Furnaces
9. Furnace Atmospheres
10. Vacuum Heat Processing
11. Surface Hardening
12. Induction Heat Treatment
13. Difficulties and Imperfections Associated with Heat Treated Steel
14. Heat Treatment of Tool Steels
15. Constitution and Heat Treatment of Stainless Steels

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