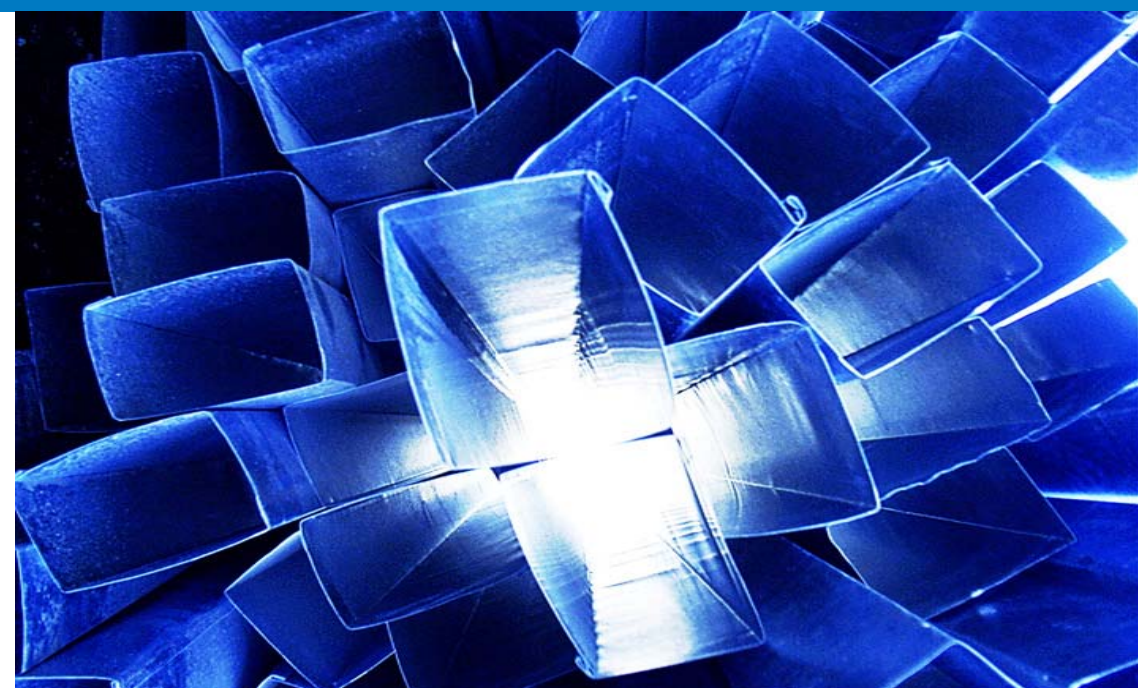


<u>Course</u>	<u>Duration</u>	<u>Cost</u>
Basics of Structural Engineering	1 Day	£300 + VAT
Carbon and Alloy Steel Metallurgy & Processing	2 Days	£600 + VAT
Combating Metallic Corrosion	2 Days	£600 + VAT
Heat Treatment for Heat Treatment Professionals	2 Days	£600 + VAT
Introduction to Corrosion	1 Day	£300 + VAT
Introduction to Fatigue	1 Day	£300 + VAT
Introduction to Heat Treatment	1 Day	£300 + VAT
Introduction to Hot/Warm Forging	1 Day	£300 + VAT
(Optional 2nd Day at £300 + VAT)		
Introduction to Non-Destructive Testing (NDT)	1 Day	£300 + VAT
Introduction to the Fracture Mechanics Approach to Fatigue Design	1 Day	£300 + VAT
Introduction to the Strain Life Approach to Fatigue Design	1 Day	£300 + VAT
Mechanical Testing of Metals	1 Day	£300 + VAT
(Optional 2nd Day at £300 + VAT)		
*Metallurgical Principles of Casting	1 Day	£300 + VAT
*Metallurgy for Absolute Beginners	1/2 Day	£195 + VAT
Metallurgy for Non Metallurgists	2 Day	£600 + VAT
Metallurgy of Special Steels, Nickel Based Superalloys and Titanium Alloys for Gas Turbine Applications	1 Day	£300 + VAT
Management Development Programme	6 Days	£1600 + VAT
(for out of region clients £900 + VAT for SMF Yorkshire and Humber based clients)		
Nickel Metallurgy	1 Day	£375 + VAT
*Quality Assurance	1 Day	£300 + VAT
Stainless Steels; Manufacture, Metallurgy & Applications	1 Day	£300 + VAT
Titanium Metallurgy	1 Day	£375 + VAT
Welding of Steel	1 Day	£300 + VAT

For further information email [skills@namtec.co.uk](mailto:skills@namtec.co.uk)

\* not yet submitted for IOM3 approval



## TECHNICAL TRAINING COURSES

### Heat Treatment for Heat Treatment Professionals

### 2 Day Workshop

# COURSE DETAILS

This is a two day workshop targeted at people who are already involved in using or operating heat treatment operations and need a fuller understanding of heat treatment principles in their job.

The course aims to be practical in nature but heat treatment is a process of micro-structural engineering and the fundamentals will be addressed. However, no prior knowledge is required.

Common engineering steels, stainless steels, nickel based alloy systems and titanium and aluminium alloy systems will be covered. The course will consider bulk heat treatments but not surface heat treatments.

## Who should attend

The course is aimed at people who are currently involved in using or operating heat treatment operations in their employment and need to broaden their understanding or branch out into new fields/alloys.

The course would be helpful to Works Metallurgists, General Managers, Supervisors and recent graduates in Materials Technology.

To gain maximum benefit from the course, people with little or no prior metallurgical knowledge may find attendance on the Introduction to Heat Treatment course first helpful.

## Speakers

Course Manager: Ken Wrigley.

Ken Wrigley is currently a consultant on metals processing issues. He is a career metallurgist with over 30 years of experience in the provision of heat treated products, particularly to the aerospace, off-shore, railway and general engineering sectors. In a career culminating as Technical Director of a number of forging companies, he has experience of heat treatment issues from shop floor to boardroom. He has been an active member of BSI drafting committees, TIG, the Materials Forum and has presented on the Sheffield Universities MSc modules.

## Venue

NAMTEC is located in Swinden House, conveniently located close to both the M1 and M18. See [www.namtec.co.uk](http://www.namtec.co.uk) for directions

*08.45-09.00hrs Registration. 17.00hrs Finish*

- **Welcome and Introductions**
- The structure of metals and alloys
- Transformation and precipitation
- Effects of alloying:
  - Ferrous system, including Stainless Steels
  - Nickel and Cobalt Systems
  - Light Alloys - Titanium and Aluminium
- Furnace Types
- Heating/Soaking/Cooling/Quenching Systems
- Selection of heat treatment parameters
- Use of predictive tools
- Heat treatment and test failures
- Quality Assurance in heat treatment; Furnace condition monitoring,  
Oil and polymer sampling, Quench rate testing, Pyrometry and furnace surveying, NADCAP/NORSOK/API requirements, Training of operatives
- What goes wrong? - case studies
- Problem solving session

The enrolment fee is £600 + VAT for this two day course. Fees must be paid in advance of the course.

To **register your interest** in Heat Treatment for Heat Treatment Professionals, please complete the following and return to: NAMTEC, Swinden House, Moorgate Road, Rotherham S60 3AR or fax to 01709 724999.

Alternatively, you can enrol online at [www.namtec.co.uk](http://www.namtec.co.uk)

Name:

Job Title:

Company:

Address:

Telephone:

Email Address:

For further information please email [skills@namtec.co.uk](mailto:skills@namtec.co.uk)