North Composites Engineering Ltd

North Composites Engineering

One Day Courses

2014

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North Composites Engineering One Day Composite Courses 2013/14

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One Day Composite Course Schedule

At North Composites Engineering our highly qualified and experienced engineers apply competitive composite design, repair and processing knowledge to all our training programs. Our experience covers numerous industries including Formula 1, Aerospace, Automotive, Marine and Wind Turbine sectors with of specialist knowledge of the design, manufacture and repair of composites utilising carbon, glass, Kevlar and hybrid materials and processes.

Our experienced professional teaching staff endeavour to promote and encourage best practice, knowledge transfer and development in advanced materials; and have developed and delivered courses within a wide range of different sectors supporting the professional development of engineers, technicians, apprentices and managers.

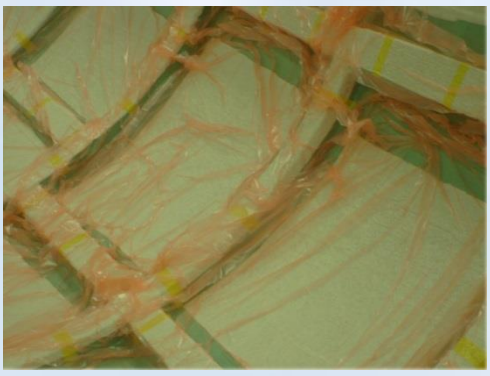
Our one day training courses are designed to build essential skills in the production of composite parts using resin infusion and Pre preg manufacturing techniques. The courses focus upon the practical application of the required techniques to produce quality components and develop highly reusable patterns and moulds using readily available materials and techniques. All our courses use extensive world class practical experiences that enable attendees to develop an understanding of why and how composite can be used in many different applications.

Our one day courses give an insight into the techniques and uses of composite materials and are an ideal lead into our extensive and in-depth scheduled courses which develop both the theory underpinning the use of composite materials and extend the practical skills needed to produce world class components and repair composite components as required by the Aerospace, Automotive, Wind turbine and Marine sectors.

All our course are delivered in our new dedicated training facility which is fully equipped with the latest ATEX extraction system and is situated conveniently close to the major road and rail networks in the North West of England.

Bespoke Courses

We also offer bespoke courses which can be specifically tailored to meet your own requirements please call to discuss your needs; training can be arranged on a one to one basis or for company based groups. Bespoke courses are individually priced following discussion of requirements and include trainer related expenses.



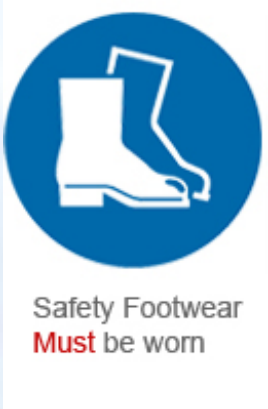
One Day Composite Course Schedule 2014

Course Code	Title	Dates	Prices*
DA001	Handling and Safety	11 Feb 14 07 March 14 26 May 14 27 June 14 14 Aug 14 04 Nov 14	£225.00
DA002	Making a Part with Pre Preg Carbon Fibre	05 March 14 07 April 14 11 July 14 22 Sept 14	£225.00
DA003	Composite Pattern and Making Mould	04 March 14 28 May 14 15 Aug 14 6 Nov 14	£225.00
DA004	Introduction to Resin Infusion	13 Feb 14 03 March 14 30 May 14 08 July 14 24 Sept 14 05 Nov 14	£225.00
016	Business and Management of Composites	24 Feb 14 29 May 14 3 Nov 14	£165.00

*All quoted prices are subject to VAT at the standard rate at the time of booking.

Safety Wear

- All course fees are per delegate per course and include provision of materials, tools, protective clothing (excluding footwear) course hand outs and refreshments.
- Delegates must wear full length trousers and closed leather shoes or safety footwear as appropriate to the course.
- All courses incorporating a practical element require safety footwear.
- Where a delegate does not have appropriate footwear or clothing they will not be able to fully engage in the course



Course Descriptions

Course Title: Handling and Safety

Course Code: DA001

Duration: 1 Day

Fees: £225.00 + VAT at standard rate

Course structure: 35% theory, 65% practical

Who is it for: This pre-cursor course is aimed at anyone new to advanced materials or who need to be conversant with good handling practices and compliance with appropriate health and safety requirements?

Introduction

This introductory course concentrates on the safe handling of the different composite materials, the risks involved in handling the materials, the health and safety requirements of handling and processing the fibres and matrix involved in the production and repair of composites. Disposal of waste and the impact for the individual and the business of incorrect disposal are introduced as essential elements of safety. The effects of incorrect management and handling of the various materials and combinations is examined along with the effects of incorrect handling, this incorporates areas relating to shelf life, storage and planning. Handling of final components to prevent visible and non-visible damage during and following production, maintenance or repair to assure fit for purpose components and processing are achieved is also covered.

The course will cover:

- Health, safety and handling
- Personal risks associated with materials handling
- Specific health and safety requirements
- COSHH
- Safe waste disposal
- Regulatory requirements
- What happens if you get it wrong
- Correct and incorrect material handling
- The importance of planning in purchase, handling and manufacture
- Final component handling
- Causes, detection and effects of damage

Course Title: Making a Part with Pre-Preg Carbon Fibre

Course Code: DA002

Duration: 1 Day

Fees: £225.00 + VAT at standard rate

Course structure: 15% non-practical, 85% practical

Who is it for: This course is aimed at anyone who wants to gain the knowledge of how to make a part using pre-preg carbon fibre without the need to invest in expensive equipment.

Introduction

This course focuses on how to manufacturing a high grade component using pre-preg layup at room and elevated temperatures so that the component retains its dimensional accuracy. Delegates use a variety of curing methods to produce pre-preg components with a consistent high class surface finish and gain an insight into how to use the different curing methods to produce components for different applications with both mat and gloss finishes which meet manufacturer's or ASTM specifications.

The course will cover:

- Health, safety and handling
- Basic materials structure, properties and performance characteristics
- Tooling requirements
- Draping methods
- Laminating
- Gel coat application
- Layup techniques, with and without vacuum bagging
- Effect of different curing methods
- Temperature and pressure control
- De-moulding
- Finishing and trimming
- Inspection, defect recognition

Course Title: Composite Pattern and Making Mould

Course Code: DA003

Duration: 1 Day

Fees: £225.00 + VAT at standard rate

Course structure: 10% non-practical, 90% practical

Who is it for: This course is aimed at those people who wish to learn how to make an accurate pattern and mould for use in the manufacture of a composite component.

Introduction

This course in pattern and mould making will introduce how best to create a pattern and mould tool, using ready available inexpensive tools and techniques which will assist you irrespective of your entry skill building your confidence through hands on experience. The in-depth consideration and usage of a variety of materials for both room and elevated temperature in the formation of practical mould tools is applied. Key features in any tool manufacture are component release and final surface finish; as such this and the various options available to enhance these features are considered and applied throughout the course.

At the end of the course an introduction to the follow up master mould making course will be highlighted to provide an opportunity for you to extend your gained knowledge into complex tooling methods.

The course will cover:

- Health, safety and handling
- Dust control and equipment use
- Tool and material selection
- Methods of generating and making patterns
- Using patterns to manufacture mould tools
- Pattern and working tool finish and component release options
- Curing methods
- Matched tool sets

Course Title: Introduction to Resin Infusion

Course Code: DA004

Duration: 1 Day

Fees: £225.00 + VAT at standard rate

Course structure: 10% non-practical, 90% practical

Who is it for: This course is aimed at anyone who wants to gain the knowledge of how to make a part using modern infusion methods in the creation of composite parts.

Introduction

This practical course will cover a variety of resin infusion approaches to show the effects the different approaches have on the finished component. The course will introduce the use of different materials and equipment using a variety of reinforcements to produce high end composite parts for different applications. The final component finish will be achieved using established and more advanced infusion methods in order to minimise any post processing and waste.

The course will cover:

- Review health, safety and handling
- Advantages and disadvantages of resin infusion techniques
- Selection of materials
- Equipment selection
- Resin flow characteristics
- Identification of parts suitable for resin infusion
- Preparation of tooling and material layup
- Process set-up, use of reusable bagging
- Using resin infusion equipment to make components with pre gel coat and without
- De-moulding
- Trimming and finishing
- Post manufacture equipment cleaning and maintenance
- Waste resin disposal issues

Course Title: Business and Management of Composites

Course Code: 016

Duration: 1 Day

Fees: £165.00 + VAT at standard rate

Course structure: 80% Theory, 20% Demonstration

Who is it for: The course is aimed at business leaders, mangers and stakeholders looking to move their business/s forward utilising composite and advanced materials.

Introduction

A non-technical briefing on the business and management issues associated with design, manufacture and repair of composite materials. The course considers material concepts and potential applications, safe manufacturing processes used for materials and components, the impact of end of life disposal and recycling. The impact the introduction of composite materials has in terms of organisation and new working practices is the underlying theme of the course along with maintaining a safe working environment.

- Familiarisation of composite materials and processes
- Composite applications
- Management of composite materials and processes
- Organisational and working requirements
- Health, safety and handling
- Organisational impact and working practices
- Composite developments
- Work force training
- End of life disposal