

Short courses in Composite Materials

Overview

The ability to tailor the material properties used in designing and manufacturing small or large scale components can provide huge benefits for many industries. Combining the adaptability of composites with clear weight savings, whilst tailoring materials properties, can give companies the edge in this advancing and profitable technology. In a partnership between Airbus and Glyndŵr University, the Advanced Composites Training and Development Centre educates current and future engineers on how composites have revolutionised the engineering world and how new and improved manufacturing techniques will continue to advance mechanical design.

The influence of these technologies will also filter into other industries utilising lessons learned by Airbus and researchers at the University. In this challenging economic climate businesses must adapt and develop to survive. Composites materials are at the forefront of material development and the success of this technology is evidenced by the progress and successes of the Airbus A350XWB and Boeing Dreamliner composites aircraft.

One of the challenges in using such advanced materials is the change in process and behaviours required to design and manufacture composites. At Glyndŵr, we have academics from research and industrial backgrounds that have been at the fore of adapting and developing materials and processes to meet the challenge of this expanding technology.

Who will benefit

Our composites training courses are suitable for anyone within an enterprise who would like an introduction to composite materials technology, or indeed individuals who would like to understand how composite materials could help them advance their products and business. We can also tailor courses to business requirements.

Course Aims

The aim of the introductory course is to allow attendees to have a flavour of this technology. By comparing composites with current materials and manufacturing process, we will highlight the strengths, weaknesses, opportunities and threats of using composites.

The course will summarise the history of composites, their current position with the global market and where they will be used in the future of many industries.

We will also combine theoretical work with practical sessions within our dedicated composites lab in the processing and mechanical testing of composites.

Course Content

Introduction to composites

- Introduction to the industrial led demand for composites.
- Composite materials and their constituents.
- Composite manufacturing processes including Hands on Lab Sessions
- Mechanics of composites
- Effects of the environmental effects on composites.

Other courses, more specific to business requirements can be organised by request

Academic Profile

Prof Richard Day – Professor of Composites Engineering. Richard has over 20 years' experience in industry focused, research and development of composites and was the first Director of the Northwest Composites Centre, an alliance which includes Manchester, Liverpool, Bolton, Lancaster and Glyndŵr Universities.

Prof Alison McMillan – Professor in Aerospace Technology, Alison has 14 years of experience in industrial aerospace stress and impact analysis, particularly in computational methods development for high duty composite components.

Martyn Jones MRaeS – Experience in manufacturing and design of aircraft structures in both metallic and composite materials. Currently undertaking research in the area of composite designs for high precision optical surfaces for space and ground based applications. Teaches Catia V5 solid and composites modelling.

Ian Winnington – Over twenty years' experience in the composites industry with particular strengths in production realisation, product development, R+D and manufacturing improvements/efficiency'.

Location and Course Delivery

Training is delivered at the Advanced Composites Training and Development Centre (ACTDC) at Hawarden Airport, Flintshire. The centre was opened in 2010 and is a collaboration between Airbus, Glyndwr University and the Welsh Assembly Government. The ACTDC was developed to train Airbus staff the principles of manufacturing aircraft components from Polymer Matrix Composites for the A350 and future aircraft programmes. Glyndwr University use the site as a teaching and research facility for both undergraduate and post graduate students using the dedicated lab, IT suite and lecture theatres to develop in this cutting edge technology.

Programmes can be developed following a site visit and discussions to identify company requirements. Location, course content, delivery time and duration can all be arranged to meet your specific requirements.

Bespoke Consultancy is also available; please contact to suit your specific requirements.

For further information, advice or to discuss your needs in more detail please contact us on **01978 293135** or email: k.dimnick@glyndwr.ac.uk or visit the website: www.in-business.org

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