COMPOSITES CURRICULUM - Unit Information

This unit forms part of the Masters level Composites Curriculum developed by Bristol and Plymouth Universities.

Taught block title	Core Block
Unit title	Introduction to Composites
Level (Credit points)	H (2)
Unit director	Professor Kevin Potter

Unit description

This unit forms part of the Masters level Composites Curriculum. It provides Learners with no prior experience with composites with a general introduction to the core concepts in understanding and applying composites in engineering applications.

Core subjects to be covered

1. History of composite materials
2. History of synthetic composites
3. Why use composites
4. Advantages and disadvantages
5. Fibres
6. Reinforcement forms
7. Resins
8. Mechanical properties
9. Other properties
10. Designing with composites
11. Predicting performance
12. Manufacturing processes
13. Shaping reinforcements
14. Traditional processes
15. High performance composites processes
16. High rate processes
17. Applications in aerospace
18. Applications in automotive
19. Applications in renewable energy and other sectors
20. Sustainable composites

Statement of unit aims

The aims of this unit are to:

1. Provide Learners with an overview of the development of composite materials
2. Identify the advantages and limitations of these materials
3. Give learners an understanding of the range of materials and process options
4. Provide the learners with an understanding of current and potential applications of composites

Statement of learning outcomes

Learners will be able to:

1. Provide a basic overview of the development of composite materials and their applications
2. Understand some of the positive and negative aspects of composites and how these impact on design and application of composites
3. Understand some of the issues and methodologies involved in the selection and design of composite products

Methods of teaching	7 lectures, 2 lab classes and demonstrations, 1 class exercise
Assessment details if required	Written assignment (85%), 20 minute assessed presentation (15%)
Timetable information	2 days of teaching in a block