

COMPOSITES CURRICULUM - Unit Information

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

Taught block title	Product Design A	
Unit title	Design for manufacture	
Level (Credit points)	M (2)	
Unit director	Professor Kevin Potter	
Unit description		
<p>This unit forms part of the Masters level Composites Curriculum. It introduces Learners to the concepts of design for manufacture and how those concepts can be applied to the design and development of composite products.</p> <p>The course will be delivered from processing science and manufacturing engineering perspectives.</p>		
Core subjects to be covered		
<ol style="list-style-type: none"> 1. Goals of Design for Manufacture 2. Design for Manufacture guidelines 3. Composites specific guidelines 4. Concurrent design 5. The rule of 10s 6. Minimizing handling 7. Understanding manufacturing problems 8. Design for easy fabrication/assembly 9. Design for fixturing 	<ol style="list-style-type: none"> 10. Robust design principles 11. The importance of supply chain reliability 12. Process specific design guidelines 13. DfM in RTM and Resin Infusion 14. DfM in prepreg bag moulding processes 15. DfM for automated fibre placement 16. Acquiring process specific information 17. Check-list approach to Design for Manufacture 	
Statement of unit aims		
<p>The aims of this unit are to:</p> <ol style="list-style-type: none"> 1. Provide Learners with an overview of Design for Manufacture concepts 2. To identify how those concepts can be applied in the context of composites products 3. Provide Learners with some tools to apply in a design environment 		
Statement of learning outcomes		
<p>Learners will be able to:</p> <ol style="list-style-type: none"> 1. Identify factors that will impact on manufacturability in terms of ease of manufacture for various processes 2. Identify how the costs of manufacture can be reduced by applying concepts of design for manufacture 3. Understand how to capture design for manufacture information for emerging processes 		
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	