

## COMPOSITES CURRICULUM - Unit Information

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

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| <b>Taught block title</b>   | Manufacturing Processes A   |  |
| <b>Unit title</b>   | Contact moulding  |  |
| <b>Level (Credit points)</b>  | H (2)   |  |
| <b>Unit director</b>  | Professor John Summerscales   |  |
| <b>Unit description</b>   |   |  |
| This unit forms part of the Masters level Composites Curriculum. It builds on the units "Introduction to Composites", "Composites Constituents" and to provide Learners with a good understanding of the characteristics of open mould process, e.g. spray-up and hand lamination.  |   |  |
| <b>Core subjects to be covered</b>  |   |  |
| 1. Resins and reinforcements  | 6. Hand lamination  |  |
| 2. Health and Safety, Occupational Exposure Standards   | 7. Centrifugal casting  |  |
| 3. Mould tools: design, materials.  | 8. Practical issues: void minimisation, "consolidation" rollers, thixotropy |  |
| 4. Gel-coating  | 9. Limitations of contact moulding  |  |
| 5. Spray-up   |   |  |
| <b>Statement of unit aims</b>   |   |  |
| The aims of this unit are to:   |   |  |
| <ol style="list-style-type: none"> <li>1. Give Learners an understanding of the basic composite manufacturing processes.</li> <li>2. Provide Learners with an overview of the (few) advantages and (many) constraints when producing composites by contact moulding.</li> <li>3. Give Learners the tools to select materials to achieve the best practical result given the process limitations.</li> </ol> |   |  |
| <b>Statement of learning outcomes</b>   |   |  |
| Learners will be able to:   |   |  |
| <ol style="list-style-type: none"> <li>1. Provide a clear overview of the low-cost processes for composites manufacture</li> <li>2. Establish an appropriate working procedure for manufacture low-performance composites.</li> <li>3. Understand the issues constraining the achievement of high-performance composites by contact moulding.</li> </ol>  |   |  |
| <b>Methods of teaching</b>  | 7 lectures, 2 lab classes and demonstrations, 1 class exercise              |  |
| <b>Assessment details if required</b>   | Written assignment (85%), 20 minute assessed presentation (15%)             |  |
| <b>Timetable information</b>  | 2 days of teaching in a block   |  |