THE UNIVERSITY OF MANCHESTER
Programme Unit Specification

1. GENERAL INFORMATION

Title	Textile Chemistry and the Environment
Unit code	MATS 40042
Credit rating	20
Level	3rd (Final)
Semester(s)	2
Pre-requisite units	MATS 10051, MATS 14052, MATS 20322
Co-requisite units	None
School responsible	Materials (Textiles & Paper Group)
Member of staff responsible	Dr Muriel Rigout
Other staff involved	Dr J.R. Easton, Prof C.Carr Mrs D. Jones (laboratory)

2. AIMS

The programme unit aims to: give an understanding of the legislation and environmental aspects of textile processing. The course also aims to give a summary of the analytical techniques available to the textile chemist, their mode of operation, their use and their limitations.

3. BRIEF DESCRIPTION OF THE UNIT

The programme comprises 12 two hour lectures and 12 three hour practical classes. Topics covered include the following.

- Legislation relating to the dye and textile industry.
- Treatment of dyehouse effluent.
- Mode of operation, use and limitations of analytical techniques including HPLC, GPC, CE, SEM, AFM, Confocal Laser Microscopy, FTIR and Thermal Analysis.

4. INTENDED LEARNING OUTCOMES *(include unit-specific and contribution to programme)*

Category of outcome	***On completion of this unit, students should be able to:***
Knowledge and understanding	• Outline the major environmental impacts of the dyeing industry and the legislation pertaining thereto. • Understand the mode of operation, uses and

	limitations of major analytical techniques including, HPLC, GPC, CE, FTIR, SEM, AFM, Confocal Laser Microscopy and Thermal Analysis.
Intellectual skills	• Explain how and to what extent recent legislation and environmental concerns impact on the textile industry. • Understand the scientific value of major analytical techniques. • Relate theoretical to practical findings.
Practical skills	• Modify cellulose substrates following experimental procedures published in the scientific literature. • Prepare a reactive dye and apply to cellulose substrates. • Use analytical techniques (FTIR, HPLC) to monitor experiments.
Transferable skills and personal qualities	• Ability to devise a work plan and experimental procedures to achieve a goal. • Ability to relate experimental findings to theoretical knowledge. • Ability to solve problems. • Ability to work efficiently in a team.

5. LEARNING AND TEACHING PROCESSES (*methods of delivery*)

This unit is delivered by lectures (nominally 20 hours), supported by a related laboratory class of approximately 36 hours duration on colour related topics.

6. ASSESSMENT

Assessment task	Length	Weighting within unit (if relevant)
Unseen examination paper	2Q's from 4 in 1½ hrs.	70%
Laboratory reports		30%

Date of current version	12/01/10