THE UNIVERSITY OF MANCHESTER
Programme Unit Specification

1. GENERAL INFORMATION

Title	Chemistry for Textiles
Unit code	MATS 10051
Credit rating	10
Level	3 (Year 1)
Semester(s)	1
Pre-requisite units	none
Co-requisite units	none
School responsible	School of Materials (Textiles and Paper)
Member of staff responsible	Dr M Rigout
Other staff involved	Mrs D Jones

2. AIMS

The programme unit aims to:
Teach some of the basic concepts of atomic and molecular structure and provide an introduction to organic chemistry, including the chemistry of alkanes, alkenes, alkynes, aromatic compounds and functional groups. In addition, fundamental concepts such as pH, curly arrows and basic laboratory skills are also taught. Specific emphasis is given to principals and reactions most relevant to textile chemistry.

3. BRIEF DESCRIPTION OF THE UNIT

The unit comprises 10 two hour lectures and 8 two hour practical classes. Topic covered include the following
Atomic structure – protons, neutron and electrons.
Atomic and molecular orbits.
Hybridisation of atomic orbitals.
Intermolecular forces.
IUPAC rules.
S_N1 and S_N2 reactions
Free radical reactions
Chemistry of organic functional groups
Introduction to the chemistry of aromatic compounds
Curly arrows
pH
Basic laboratory skills

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

Category of outcome	*Students should be able to:*
Knowledge and understanding	Know sufficient chemistry to allow them to understand some of the chemical concepts underpinning the preparation of simple organic compounds, including azo dyes and some dye intermediates.
Intellectual skills	Use the concept of hybridisation to explain the formation and nature of carbon to carbon bonding in alkanes, alkenes, alkynes and aromatic compounds. Deduce the nature of the bonding in small (diatomic) inorganic molecules from a knowledge of the atomic structures of the component atoms.

Practical skills	Determine the components of a commercial black disperse dye. Prepare an azo dye by a diazotisation – coupling sequence.
Transferable skills and personal qualities	Ability to solve problems. Ability to work effectively in a team. Ability to produce written record of practical work.

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

This unit is delivered by lectures (nominally 20 hours) supported by 16 hours in the laboratory.

6. ASSESSMENT

Assessment task	Length	Weighting within unit (if relevant)
Assessments Examination	 3Q from 5 in 2 hr.	20% 80%

Date of current version	23rd September 2009