

THE UNIVERSITY OF MANCHESTER

Unit Specification

The information on this form is used on the website for marketing our degrees and should be written in natural language and targeted at A level students. It is also needed by our own students, as well as students outside the School in other Schools and overseas who might choose our units. The aims and the brief description will be used together for marketing purposes, but independently of the rest of the form. The aim(s) describe the point of the unit, and the brief description explains how the unit will run. The aims and brief description should be able to be placed in a single paragraph and logically follow each other.

1. GENERAL INFORMATION

Title	Professional development and project preparation
Unit code	EART29200
Credit rating	10 credits
Level	Level 5
Contact hours	22 hours
Other Scheduled teaching and learning activities*	None
Pre-requisite units	None
Co-requisite units	None
Department responsible	Department of Earth & Environmental Sciences (DEES)
Member of staff who has submitted the Unit Specification	Drs Clare Robinson, Margaret Hartley and Professor David Schultz (unit coordinators) and other members of DEES academic staff
ECTS**	5
Notional hours of Learning	100

2. AIM(S)

The aim of this year-long course unit is to develop professional and transferable skills to support the future employability of students in the Earth and Environmental Sciences. This includes universal skills such as critical assessment and formulating arguments, written and oral communication, project planning and organisation, and teamwork. These skills are delivered primarily within the context of preparation for the independent research or mapping project in the third year. Particular skills developed include report writing, critical synthesis of academic literature in the formulation of a project proposal, as well as the use of analytical software, data handling/interpretation and project planning, including choice of project and logistical/academic preparation.

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3. BRIEF DESCRIPTION OF THE UNIT

This is a two-semester unit delivered through weekly small group tutorials. In the first semester the focus is on report writing. Students will use relevant scientific data to learn how to organize, present and interpret data. This will also include guidance on how to write an abstract, introduction and, depending on programme/pathway, a mapping formation description, a research-question-focused geological history and/or research report aims, objectives and discussion sections. Specific software systems will be introduced to provide the opportunity for giving extended personalized feedback on, for instance, experiences of the early Semester 1 field course on the Earth and Planetary Science pathways or for discussing data collection strategies in future environmental data collection exercises.

In Semester 2 the focus of attention is on the preparations for the independent research project or the independent mapping project in the third year, which will be carried out in tandem with further development of scientific writing skills. For the Geology pathway (with an independent mapping project), this will involve the logistical and academic preparations for this activity, which typically involves 6 weeks fieldwork in the UK or overseas beginning late June. The early focus is on fieldwork logistics: making travel and accommodation arrangements; estimating costs; establishing an accurate picture of the terrain and climate in the mapping area; carrying out a comprehensive risk assessment; getting first aid training; obtaining base-maps of the mapping area. The subsequent focus is on academic preparation: preparing a short literature review of what has been published about the geology of the mapping area; identifying a research question that can be explored within the mapping area and writing a short proposal based around that question.

For the other (Earth and Planetary and Environmental Science) pathways, Semester 2 involves the initial preparations for the final year independent research project and will focus largely on the further development of scientific writing skills via the production of a critical literature-based project research proposal. Students will choose a project early in Semester 2, and use the exercise of reviewing relevant literature to help them formulate/elucidate their project aims and objectives, as well as potentially designing field, lab or other measurements to test hypotheses or answer questions.

4. INTENDED LEARNING OUTCOMES
(insert extra rows as required)

<i>On the successful completion of the course, students will be able to:</i>		<i>Developed</i>	<i>Assessed</i>
ILO 1	Analyze, describe and interpret discipline specific quantitative data	Y	Y
ILO 2	Write a scientific report that presents the outcomes of discipline specific data analyses or mapping exercise.	Y	Y
ILO 3	Plan a strategy for collecting pathway-relevant data that is based upon a consideration of what has been previously published.	Y	Y
ILO 4	Formulate a research question relevant to an independent project.	Y	Y
ILO 5	Assess risk of field/lab work or research methodologies	Y	No

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ILO 6	Write a critical literature review-based research proposal that outlines the research project question to be addressed, set in the context of relevant scientific literature and, depending on pathway, the methods, risks involved, logistics and resources required.	Y	Y
ILO 7	Prepare and present oral scientific arguments on a discipline specific topic	Y	No

5. LEARNING AND TEACHING PROCESSES (INCLUDING THE USE OF E-LEARNING)

Teaching is done in small groups led by pathway cohort leads and/or staff with pathway-relevant expertise. Some weeks one-on-one staff-student discussions may take place. Some teaching will be delivered as lectures to the entire (both programmes) group. Teaching may be supported by short video demonstrations, general information on report writing, the use of drawing packages and other relevant information posted on Blackboard.

Students are given continuous feedback on their progress from staff and by opportunities each semester to submit drafts of written work for constructive comments. Both assessments are submitted via Turnitin on Blackboard, one at the end of either semester. Post-course, personalized, written feedback will be provided.

Successful project work is about gaining skills and confidence for independent work. Hence much of the teaching strategy within this unit is designed at guiding students towards achieving successful independent learning and imparting crucial skills (e.g., scientific writing and literature synthesis) in the context of project work.

6. COURSE CONTENT

Semester 1

The schedule of tutorials in Semester 1 will be broadly follow the same formula in guiding students toward the writing of a scientific report, but may differ in the order of delivery or exact nature of some components, in that some will be pathway and/or programme-specific. In addition to producing the final report, students will have the opportunity to engage with careers services and materials in the tutorials in the early part of Semester 1. Students will have opportunities for feedback on a draft of their writing in the latter part of Semester 1, to help with the production of the final report.

Semester 2

The tutorials in Semester 2 will have the following broad schedule:

Weeks 1-4: Introduce the process of selecting a research project (or for Geology pathway students, a mapping area), accessing peer reviewed literature (including library access), project planning (to possibly discuss analytical techniques, field planning, health and safety etc), formulating research questions.

Week 5: Students select research project and have first meeting with supervisors. How to manage the student-supervisor relationship.

Weeks 6-7: Lectures on approaches to literature review and scientific writing; students to submit samples of their writing for feedback.

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Weeks 8-9: Pathway specific discussions in tutorial groups on literature review-based project proposal writing and what to include (e.g., formulating aims/objectives, ensuring relevant literature has been identified, specific analytical/software needs); feedback given to students on samples of their writing.

5th May 2023: Literature review-based project proposal due.

7. STUDY HOURS

	Type	Example student activity	Total Hours	New material	Consolidation and Practice
Contact time (students are in front of staff)	Lecture (new material)	Mostly listening & taking notes (mostly new material)			
	Lecture (revision/examples)	Mostly listening & taking notes (no new material- revision of course)			
	Practical (new material and practice. Typically 25-50% of practical time is spent on new material)	Interactive individual or group work (problem solving, experiments, watching demonstrations, describing and interpreting samples, paper-based exercises, computer-based exercises)			
	Tutorial	Interactive small group work	20	20	
	Seminar/examples class	Working on and discussing questions			
Independent study time	Pre/post tutorial work	Reading own notes, re-solving examples, prep work, revisit podcast	20		20
	Pre/post practical work/write up	Complete practical work, prep work, reading feedback			
	Studio/workshop time	Individual or group work (student led), discussion, problem solving			
	Reading	Guided reading of research articles, books, online resources etc	15	11	4
	Online discussion forums	Reading and posting messages			
	Formative assessments (do not contribute to unit mark)	Practicing the type of exercises the students will be later tested on e.g., online tests, problem sheets etc	20		
Summative Assessment and preparation	Coursework	Complete coursework	25		
	Revision for tests and exams	Self-test on lecture notes, solve past exam papers			
	Tests and/or Exam	Duration of the test/exam			
Summary	Total New Material		31		
	Total Consolidation and Practice		24		
	Total Assessment Hours (including preparation time)		45		
	Total Time Spent on Unit		100		
	Total Contact Hours		20		

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8. ASSESSMENT (INCLUDING SUMMATIVE AND FORMATIVE ASSESSMENT, and INFORMATION ABOUT FEEDBACK)
(insert extra rows as required)

All pathways:

Assessment type	% Weighting within unit	Hand out and hand in dates	Length	How, when and what feedback is provided	ILO tested
Report (individual)	50%	Start Week 2 Semester 1; submit 16 th December 2022	Max 2000 words	Formative personalized feedback on draft text is provided (generally verbally) before submission; detailed personalized written feedback is provided at the start of Semester 2	1,2
Report (individual; literature review-based project research proposal)	50%	Start Week 1 Semester 2; submit on 5 th May 2023.	Max 2000 words	Formative personalized feedback on draft text is provided (generally verbally) before submission.	3,4,6

9. INDICATIVE READING LIST

Pathway dependent

Date of current version	January 2022
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Document control box	
Policy / Procedure title:	Unit Specification Template
Date approved:	January 2009
Approving body:	TLSO
Implementation date:	January 2009
Version:	2.1, June 2012
Supersedes:	1.1
Previous review dates:	
Next review date:	tbc
Related Statutes, Ordinances, General Regulations	N/A

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Related Policies:	N/A
Related Procedures and Guidance:	The Manual of Academic Procedures (MAP) - http://www.tlso.manchester.ac.uk/map/
Policy owner:	Louise Walmsley, Head of Teaching and Learning Support Office
Lead contact:	Miriam Graham, Teaching and Learning Adviser (Policies and Procedures)