

CH994-15 Interdisciplinary Research Skills

24/25

Department

Chemistry

Level

Taught Postgraduate Level

Module leader

Nikola Chmel

Credit value

15

Module duration

52 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

Successful completion of university level research requires student to have made a 'substantial contribution to knowledge' (to quote university regulations) and that this is communicated to an appropriate research community. There are many aspects involved in undertaking original research, including the student's own ability to think and to be creative. In addition, students need to have a range of skills that will enable them to use their intrinsic academic ability and scientific creativity to produce world class research. Some of the skills are technical, e.g. how you use a particular piece of equipment or a method to collect data, but many of them transcend the details of a particular project.

Module aims

This module is designed to be integrated with the modules and research work you will undertake during your MSc. Its aim is to help you realise the skills that you have learned during your MSc that 'transfer' across the boundaries of any particular module. The module content is the kind of skills that future employers whether in academia or industry or elsewhere are concerned about. Frequently employers are less concerned about your specific technical skills than the fact that you can acquire such skills and use them in a diverse range of future projects.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The module content spans 4 areas:

- A. Understanding the scientific background to a research area
- B. Planning a project
- C. Presenting your work
- D. Working with colleagues

A. Understanding the scientific background to a research area

Most of this section is devoted to the students' own project, during which they will be mentored by a researcher who is an expert in the specialist area covered by the project remit. It also requires the student to be able to understand material presented in verbal form by other writers in their specialist field.

A1. Review of 3 Research Papers from a refereed research journal.

A2. Undertake a literature review project on the research topic identified for you by your mentor.

A3. Present a brief summary (maximum of 1 A4 page each) of three seminars attended.

B. Planning a project

Research projects involve the use of a wide range of skills, including planning the project to ensure that resources are available at the right time, undertaking tasks in the right order and with the appropriate timing so that later stages of the project can be developed with maximum efficiency, and according to a predetermined time scale. Students will gain skills by completing the following tasks.

B1. Write a timeline for task A2.

B2. Develop a list of questions that form the basis for task A2.

B3. Review the timeline from B1 and revise it in consultation with the mentor.

B4. Write a research project proposal (1–2 pages).

C. Presenting your work

However brilliant one's research, it is unlikely to make an appropriate impact if one is unable to communicate it to one's own academic community, and the wider community too. This section of the course emphasises the presentation aspects of the project that has formed the basis for sections A and B. This section requires students to present their project work in the specific ways required of those working in their subject area.

C1. Present a poster.

C2. Describe your project work in a seminar.

C3. Report on your chosen research area in a structured dissertation.

C4. Prepare a web page on your research area for a general audience.

D. Working with colleagues

Much research is now carried out in teams of two or more people. This means that individuals can benefit from the skills and strengths of their colleagues. However, this may inevitably create

tensions arising from different personalities, work practices and research approaches that can hinder one's research. A partial solution to this is for individuals to understand how you work and then to understand how others around them work. This part of the module has 4 tasks.

D1. Consider one of the many models that describe different learning styles and assess your preferred approach.

D2. Analyse the roles that are required for a successful team and discuss what your preferences.

D3. Report on a situation where they worked in a team prior to undertaking D2.

D4. Engage in another team activity with the hindsight of D2.

Learning outcomes

By the end of the module, students should be able to:

- Understand and summarise the scientific background to a research area
- Plan and manage an interdisciplinary research project
- Present the results of their research to a variety of audiences
- Work effectively within an interdisciplinary team

Interdisciplinary

Interdisciplinary research skills

Subject specific skills

Understanding and awareness of current research and problems relating to the area of the research project.

Ability to critically evaluate the literature and identify the most important body of work.

Ability to plan and manage research work.

Ability to present data to an audience of peers in various formats (poster, presentation, structured thesis)

Transferable skills

Creative and innovative thinking, Critical thinking, Problem solving, Communication, Teamwork and working effectively with others, Information literacy (research skills), Digital literacy, Professionalism, Self-awareness

Study

Study time

Type	Required
Seminars	5 sessions of 2 hours (7%)
Total	150 hours

Type	Required
Assessment	140 hours (93%)
Total	150 hours

Private study description

No private study requirements defined for this module.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Assessment component			
Research Skills Portfolio	100%	140 hours	Yes (extension)
Portfolio of evidence collected throughout the MSc year.			

Reassessment component is the same

Feedback on assessment

Written feedback will be provided for the portfolio tasks

Availability

Courses

This module is Core for:

- TCHA-F764 Postgraduate Taught Global Decarbonisation and Climate Change
 - Year 1 of F764 Global Decarbonisation and Climate Change
 - Year 1 of F76B Global Decarbonisation and Climate Change (Policy)

- Year 1 of F76A Global Decarbonisation and Climate Change (Science)
- Year 2 of F764 Global Decarbonisation and Climate Change