

# CH222-15 Practical and Professional Chemistry Skills II

**22/23**

**Department**

Chemistry

**Level**

Undergraduate Level 2

**Module leader**

Stephen Bromfield

**Credit value**

15

**Module duration**

10 weeks

**Assessment**

100% coursework

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

N/A.

[Module web page](#)

### Module aims

Following on from the corresponding Year 1 module, students are given opportunity to consolidate and advance chemistry-relevant practical skills in, and related-to, laboratory work. By undertaking this module, students will gain confidence, greater experience and ultimately become upskilled in:

- Planning experiments which are operationally relevant, safe and effective.
- Synthesis of 'inorganic' and 'organic' compounds.
- Using spectroscopy to support synthetic work (e.g. structural elucidation).
- Using contemporary methods and equipment in the area of physical chemistry.
- Computational chemistry techniques.
- Presenting and communicating experimental progress and outcomes using relevant spoken and written formats.

The tasks undertaken in this module exemplify chemistry concepts encountered in core

modules and, where possible, set practical work in an interdisciplinary context at interfaces between related disciplines.

## **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.

A range of practical experiments are undertaken in the areas of physical, inorganic, organic and computational chemistry to highlight important areas covered in other core modules. The spectroscopy component is devoted to detailed interpretation of spectroscopic evidence to elucidate molecular structure. The professional skills component contextualises relevant employability skills within the framework of presenting or addressing chemistry-focused problems.

## **Learning outcomes**

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

- The student should be able to work collegially to effectively solve chemistry-centred problems.
- The student should be able to work competently and safely in a chemistry laboratory.
- The student should be able to recognise relevant hazards associated with practical work and plan approaches to minimise their risks.
- The student should be able to carry out syntheses to produce 'organic' and 'inorganic' compounds.
- The student should be able to isolate and purify compound(s) using a variety of techniques.
- The student should be able to set up and monitor instrumentation/computational software to record relevant data.
- The student should be able to process data (e.g. using Excel) in order to critically evaluate experimental findings and draw conclusions.
- The student should be able to communicate the progress and outcome of experiments through relevant spoken and written formats (e.g. useful experimental notes, appropriately structured written submissions, presentations etc).

## **Indicative reading list**

Spectroscopic Methods in Organic Chemistry by D Williams and I Flemming

Extensive on-line support materials, references and links on Moodle.

## **Research element**

research-based practical experiments and literature research assessments.

## **Interdisciplinary**

cross-disciplinary with biology, physics, maths, computer science and business.

## Subject specific skills

Problem solving  
Teamwork  
Organisation and time management

## Transferable skills

Problem solving  
Teamwork  
Organisation and time management

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## Study

### Study time

Type	Required	Optional
Lectures	7 sessions of 1 hour (5%)	2 sessions of 1 hour
Practical classes	10 sessions of 6 hours 30 minutes (43%)	
Other activity	16 hours (11%)	
Private study	62 hours (41%)	
Total	150 hours	

### Private study description

Pre-lab work; write-up of associated professional skills submissions.

### Other activity description

Spectroscopy workshops

## Costs

No further costs have been identified for this module.

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## Assessment

You must pass all assessment components to pass the module.

### Assessment group A1

	<b>Weighting</b>	<b>Study time</b>
Laboratory work and/or associated submissions	100%	

## **Feedback on assessment**

For practical experiments, written feedback on all reports submitted.

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## **Availability**

### **Pre-requisites**

To take this module, you must have passed:

- All of
  - [CH155-30 Practical and Professional Chemistry Skills I](#)

## **Courses**

This module is Core optional for:

- UCHA-4 Undergraduate Chemistry (with Intercolated Year) Variants
  - Year 2 of F101 Chemistry (with Intercolated Year)
  - Year 2 of F122 Chemistry with Medicinal Chemistry (with Intercolated Year)
- UCHA-3 Undergraduate Chemistry 3 Year Variants
  - Year 2 of F100 Chemistry
  - Year 2 of F100 Chemistry
  - Year 2 of F121 Chemistry with Medicinal Chemistry
- Year 2 of UCHA-F110 Undergraduate Master of Chemistry (with Industrial Placement)
- Year 2 of UCHA-4M Undergraduate Master of Chemistry Variants