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# Core 6: Spectroscopy & Chemistry - CHE00019I

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- **Department:** Chemistry
- **Module co-ordinator:** Dr. Moray Stark
- **Credit value:** 30 credits
- **Credit level:** I
- **Academic year of delivery:** 2020-21
  - See module specification for other years: [2018-19](#) [2019-20](#)

## Module will run

**Occurrence**

A

**Teaching cycle**

Spring Term 2020-21 to Summer Term 2020-21

## Module aims

This module explores spectroscopic methods and further aspects of chemistry. The subject matter explored in this module is covered at a more advanced level compared to the foundations courses delivered as part of stage 1 and serves to signal to the students how their understanding of chemistry will be expected to develop in its sophistication throughout the course.

## Module learning outcomes

At the end of this module students will have:

- an understanding of advanced spectroscopy and concepts in and catalysis.
- developed written and verbal communication skills in small group tutorials and workshops.
- applied the principles taught in the module to solve unseen problems in small group tutorials and workshops
- developed new laboratory skills in physical chemistry, including the accurate recording of experimental data.
- performed data analysis using a range of software.
- developed skills to effectively report data obtained in a physical chemistry experiment in a written fashion.

## Module content

**Module content:**

- Vibrational spectroscopy (MCRC, 6 lectures, central workshop and assessed workshop)
- Excited states and photochemistry (JNM, 6 lectures, college tutorial)
- Applications of NMR spectroscopy in organic chemistry (PAOB, 5 lectures, central workshop)
- Catalysis (SBD, 8 lectures, college tutorial)
- Photoelectron spectroscopy and molecular orbital theory (CED, 6 lectures, central workshop and college tutorial)
- Fundamentals of magnetic resonance (MEH, 6 lectures, college workshop)
- Physical chemistry practical (7 days, LCA/TJD)
- Scientific writing (2 lectures, NJW)

## Assessment

Task	Length	% of module mark
<b>24 hour open exam</b> Core Module 6	N/A	70
<b>Essay/coursework</b> Practical Scripts: Physical Chemistry	N/A	30

## Special assessment rules

Non-reassessable

## Additional assessment information

Advanced Physical Practical:

- practical report submission deadline typically week after practical (weeks 3 - 9, on the day before next in lab)

Core 6 Closed Exam: Spectroscopy & Chemistry

- answer one compulsory question and three out of four other questions.

Vibrational spectroscopy is assessed by an assessed workshop. Reassessment of this component is in the form of an exam question based on the same content.

## Reassessment

Task	Length	% of module mark
<b>24 hour open exam</b> Core Module 6	N/A	70

## Module feedback

- Tutorials/workshops: written feedback will be given for tutorial work within a week. Written and/or oral feedback for workshops will be given either during the sessions or within a week.
- Practicals: written feedback will be provided on all summative practical work within 20 working days.
- Exams: closed exam results with per-question breakdown are returned to the students via supervisors within 5 weeks. Outline answers are made available via the Chemistry web pages when the students receive their marks, so that they can assess their own detailed progress/achievement. The examiners' reports for each question are made available to the students via the Chemistry web pages.

## Indicative reading

Atkins, Overton, Rourke, Weller and Armstrong, "Shriver and Atkin's Inorganic Chemistry", Oxford University Press.

Clayden, Greeves, Warren and Wothers, "Organic Chemistry", Oxford University Press.

The information on this page is indicative of the module that is currently on offer. The University is constantly exploring ways to enhance and improve its degree programmes and therefore reserves the right to make variations to the content and method of delivery of modules, and to discontinue modules, if such action is reasonably considered to be necessary by the University. Where appropriate, the University will notify and consult with affected students in advance about any changes that are required in line with the University's policy on the [Approval of Modifications to Existing Taught Programmes of Study](#).

Coronavirus (COVID-19): changes to courses

The 2020/21 academic year will start in September. We aim to deliver as much face-to-face teaching as we can, supported by high quality online alternatives where we must.

Find details of the measures we're planning to protect our community.

[Course changes for new students](#)