

Warning: An incomplete or missing proforma may have resulted from system verification processing

Title: PROPERTIES OF MOLECULES  
Status: Definitive  
Code: **4004APCHEM** (121126)  
Version Start Date: 01-08-2021

Owning School/Faculty: Pharmacy & Biomolecular Sciences  
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Philip Denton	Y
Mark Wainwright	
Linda Seton	

**Academic Level:** FHEQ4      **Credit Value:** 20      **Total Delivered Hours:** 62  
**Total Learning Hours:** 200      **Private Study:** 138

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	40
Tutorial	5
Workshop	15

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	50	2
Report	Report	Report	40	
Future Focus e-learning task	SAS	Self Awareness Statement	10	

### Aims

*Building on the first semester modules, this will cover more complex organic molecules and their physical attributes and reactivity resulting from molecular structure - for example the way a molecule might dissolve in one solvent, but not in another. The idea of multiple-step reactions and interconversions of molecules are also covered, as an important factor in the industrial production and use of chemicals. Career and employability self-awareness will also be assessed.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Show how target molecules can be synthesised using multiple steps.
- 2 Demonstrate simple relationships between molecular structure and physical properties.
- 3 Relate the principles of kinetics and thermodynamics to simple organic reactions.
- 4 Reflect upon their personal development during the completion of identified tasks, including their ability to work with others.

## **Learning Outcomes of Assessments**

The assessment item list is assessed via the learning outcomes listed:

Examination	1	2	3	
Report	1	2	3	4
Self Awareness Statement	4			

## **Outline Syllabus**

*Functional groups and reactions in organic molecules. The use of thermodynamics and kinetics to describe the nature and process of chemical reactions and phase changes. The use of phase diagrams to describe phase changes.*

## **Learning Activities**

Lectures, tutorials and workshops.

## **Notes**

This second semester module will cover more complex organic molecules and their physical attributes and reactivity resulting from molecular structure - for example, why does a molecule dissolve in one solvent, but not in another? Can we predict this? How does Physical Chemistry help us to understand this? The idea of multiple-step reactions and interconversions of molecules will also be covered, as this is also an important factor in the industrial production and use of chemicals. Students will also use this module for their employability self-awareness assessment

