Pathways and Academic Learning Support Centre

EPPREP 941: Introduction to Undergraduate Chemistry (Advanced)

Callaghan
Summer 2 - 2024

The Pathways and Academic Learning Support Centre recognises and respects the unique history and culture of Aboriginal and Torres Strait Islander peoples and their unbroken relationship with the lands and the waters of Australia over millennia. We are dedicated to reconciliation and to offering opportunities for Aboriginal and Torres Strait Islander peoples to access and succeed in higher education. The Centre is committed to providing a culturally safe and inclusive environment for all.

OVERVIEW

Course Description

This preparation course aims to build on and refresh the chemistry skills already gained from the study of HSC 2 Unit Chemistry. The course covers a broad range of topics within the field of chemistry and builds further skills in chemical calculations.

The course is organised to present fundamental chemical concepts with particular emphasis placed on topics required for CHEM1010/CHEM1110 or CHEM1020/CHEM1120. Students intending to study the biological or life sciences are advised that an understanding or chemistry is essential.

Academic Progress Requirements

Nil

Requisites

This course is only available to domestic students enrolled in NUPrep Bridging and Refresher [22223].

Contact Hours

Lecture
Face to Face On Campus
2 hour(s) per day for 5 day(s) starting Week 1

Self-Directed Learning
Self-Directed
1 hour(s) per day for 5 day(s) starting Week 1
It is expected that you will spend at least one hour per day practicing skills and consolidating your learning.

Tutorial
Face to Face On Campus
1 hour(s) per day for 5 day(s) starting Week 1

Unit Weighting

5

Workload

Students are required to spend on average 20 hours of effort (contact and non-contact) including assessments per 5 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator

Dr Jennifer Irwin
Jennifer.Irwin@newcastle.edu.au
02 43484217
Consultation: Please email to schedule an appointment.

Teaching Staff

Other teaching staff will be advised on the course Canvas site.

School Office

Callaghan
Ground Floor, General Purpose Building (GP)
Ph: 02 4921 5558
enabling@newcastle.edu.au

Ourimbah
HO 168, Humanities Building
Ph: 02 4348 4076
enabling@newcastle.edu.au

SYLLABUS

Course Content

- Chemical reactions and stoichiometry
- Chemical and empirical formulas
- Redox chemistry
- Titrations
- Thermochemistry
- Gas laws
- Lewis structures and VSEPR
- Chemical equilibrium
- Organic chemistry

Course Learning Outcomes

On successful completion of this course, students will be able to:
1. Identify the limiting reagent when chemicals are mixed and calculate the theoretical yield for the chemical reaction
2. Calculate percentage yield
3. Convert between chemical and empirical formulas
4. Determine the empirical formula of a substance from the % mass contribution
5. Calculate the standard electrode potential for redox reactions
6. Determine the oxidation number of atoms within compounds and molecules
7. Calculate the concentration of an unknown solution using titration
8. Calculate enthalpy change for a chemical reaction using Hess's Law
9. Use specific and molar heat capacities
10. Perform calculations using the ideal gas equation
11. Calculate partial pressures
12. Understand that there are exceptions to VSEPR
13. Write equilibrium expressions and calculate equilibrium constants
14. Identify isomers of an organic compound
15. Identify chiral centres in an organic compound.

Course Materials

A scientific calculator is required. All other course materials will be provided on the course Canvas site. Students are not required to purchase a textbook.

ASSESSMENTS

This course has 5 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Quiz 1	Tuesday 20th February 11:59pm	Individual	10%	1, 2, 3, 4
2	Quiz 2	Wednesday 21st February 11:59pm	Individual	10%	5, 6, 7, 8, 9
3	Quiz 3	Thursday 22nd February 11:59pm	Individual	10%	10, 11, 12, 13
4	Quiz 4	Friday 23rd February 11:59pm	Individual	10%	14, 15
5	Chemistry Workbook	Friday 23rd February 11:59pm	Individual	60%	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Late Submissions Completion of each assessment item is necessary for a pass grade in this course. Extensions of time may be granted in consultation with your Course Coordinator.

Assessment 1 - Quiz 1

Assessment Type Quiz
Description Short online questions assessing content from Day 1
Weighting 10%
Due Date Tuesday 20th February 11:59pm
Submission Method Online
Assessment Criteria Correct answers
Return Method Online
Feedback Provided Feedback will be provided on Canvas upon completion of the quiz

Assessment 2 - Quiz 2

Assessment Type Quiz
Description Short online questions assessing content from Day 2
Weighting 10%
Due Date Wednesday 21st February 11:59pm
Submission Method Online
Assessment Criteria Correct answers
Return Method Online
Feedback Provided Feedback will be provided on Canvas upon completion of the quiz

Assessment 3 - Quiz 3

Assessment Type Quiz
Description Short online questions assessing content from Day 3
Weighting 10%
Due Date Thursday 22nd February 11:59pm
Submission Method Online
Assessment Criteria Correct answers
Return Method Online
Feedback Provided Feedback will be provided on Canvas upon completion of the quiz

Assessment 4 - Quiz 4

Assessment Type Quiz
Description Short online questions assessing content from Day 4
Weighting 10%
Due Date Friday 23rd February 11:59pm
Submission Method Online
Assessment Criteria Correct answers
Return Method Online
Feedback Provided Feedback will be provided on Canvas upon completion of the quiz

Assessment 5 - Chemistry Workbook

Assessment Type	Log / Workbook
Description	The workbook will be used to complete sample problems in class time
Weighting	60%
Due Date	Friday 23rd February 11:59pm
Submission Method	Online
Assessment Criteria	Correct answers
Return Method	Online
Feedback Provided	Feedback will be provided on Canvas

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Grade	Description
Ungraded Pass (UP)	There are no marks associated with this result and you have met the level requirements to pass the course.
Fail (FF)	Failure to satisfactorily achieve assessment objectives or compulsory course requirements. A fail grade may also be awarded following disciplinary action.

Communication Methods

Email is the principal form of communication at the university and within this course. Always use your student email (NUmail), rather than a private email address, and check this regularly. As Course Coordinator I will try to respond to your email within three (3) working days. I will not normally respond to emails over the weekends. Please be courteous in your email communication and in the online space. The University of Newcastle has a Code of Conduct that covers all communications in the University for staff and students.

Canvas is used to distribute course material, announcements and other information. It is also used for online quizzes and to allow students to track their individual progressive assessment results via Grades.

Discussions forums in Canvas can be used to ask questions about minor issues. Students are strongly encouraged to use these to communicate with each other, discuss issues relating to the course, and solve minor problems.

Adverse Circumstances

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for Adverse Circumstances must be lodged via the online Adverse Circumstances system for all individual assessment items worth 30% or greater **by 11:00pm on the day the assessment is due**. For assessment items less than 30%, you will need to contact your Course Coordinator by 11:00pm on the due date of the assessment item.

Before applying you must refer to the Adverse Circumstances Affecting Assessment Items Procedure and the Adverse Circumstances Affecting Assessment Items Policy.

Please note that students must submit their adverse circumstances application via the online Adverse Circumstances system by 11:00pm on the due date of the assessment item, even if you are using a Reasonable Adjustment Plan (RAP) as your supporting documentation.

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. Please refer to the Student Academic Integrity Policy.

Workplace Health and Safety Requirements

There are no specific WH&S requirements for this course.

Important Policy Information

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures that support a safe and respectful environment at the University.

Course Evaluation	Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.
Timetable	Your timetable for this course is available via the myUni Student Portal and can also be found here.
Software	Free Microsoft Office software is available to enrolled students here and includes 5 TB of free cloud storage with OneDrive.
Written Assessment Word Limits	Word limits for your written assessments includes headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. You will not receive a penalty for exceeding the word limit (there is a tolerance of up to 10%), but any work after the maximum word limit may not be included within the allocation of marks.

This course outline was approved by the Director, PALS. No alteration of this course outline is permitted without Director approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.