UNSW Course Outline

CHEM1832 Chemistry for Health Sciences - 2024

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General Course Information

Course Code : CHEM1832
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Science
Academic Unit : School of Chemistry
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course builds on an elementary knowledge of chemistry (equivalent to one year of high school chemistry, such as Year 11 chemistry, or CHEM1001 at UNSW) to explore the structures of atoms which leads to an understanding of the periodic trends in the properties of the

elements. This knowledge is applied to understanding chemical bonding and intermolecular forces which together are responsible for determining the properties of diverse materials including drug molecules. General principles of chemical equilibrium are developed and applied to chemical reactions involving acids and bases. The applications of the laws of thermodynamics to chemical processes are described and ultimately linked to chemical equilibrium. A key part of chemistry is to study the speed of chemical reactions, which will provide a strong foundation for subsequent courses in the program.

Course Aims

This course aims to provide you with some essential, foundational knowledge in chemistry that will underpin many of your subsequent studies. The laboratory component of the course equips you with the necessary skills to safely handle chemicals and laboratory equipment, perform accurate measurements, meaningful analyses, and to manipulate and present data.

Relationship to Other Courses

Enrolment in 3894 Nutrition/Dietetics and Food Innovation or 3895 Pharmaceutical Medicine/ Pharmacy

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Apply the language of chemistry to the naming and formulae of chemical substances and to chemical reactions
CLO2 : Perform calculations to quantify substances relating to chemical reactions
CLO3 : Apply theory and laws to predict properties and behaviour of chemical substances
CLO4 : Demonstrate proficiency in defined core chemistry laboratory skills by safely investigating chemical reactions in first-hand scientific investigations
CLO5 : Gather, analyse, and interpret data from first-hand scientific investigations to draw valid conclusions

Course Learning Outcomes	Assessment Item
CLO1 : Apply the language of chemistry to the naming and formulae of chemical substances and to chemical reactions	• Final Exam • In-term tests • Laboratory Assessment • Quizzes
CLO2 : Perform calculations to quantify substances relating to chemical reactions	• Final Exam • In-term tests • Laboratory Assessment • Quizzes
CLO3 : Apply theory and laws to predict properties and behaviour of chemical substances	• Final Exam • In-term tests • Laboratory Assessment • Quizzes
CLO4 : Demonstrate proficiency in defined core chemistry laboratory skills by safely investigating chemical reactions in first-hand scientific investigations	• Laboratory Assessment
CLO5 : Gather, analyse, and interpret data from first-hand scientific investigations to draw valid conclusions	• Laboratory Assessment

Learning and Teaching Technologies

Moodle - Learning Management System | Echo 360

Additional Course Information

How this course works

We know that chemistry can be a conceptually challenging topic to study and that students in

CHEM1832 have mixed chemistry backgrounds. We want every one of our students to succeed and to gain valuable skills and knowledge. For these reasons, we have developed a flexible course structure which is dedicated to helping you gain the skills needed to succeed not only in this course but in the rest of your degree.

Please note: The flexibility of the course design is designed with you in mind but has its limitations, inherent to a 9 week teaching period. Though you have multiple opportunities to attempt and pass the core assessments in this course it does not mean that you can put off the course work until last minute. You should always be aiming to sit the first assessment opportunity offered – this will afford you the maximum opportunity to pass.

The format and learning activities are different to many other courses and so we recommend you read all the following information carefully.

Threshold Knowledge and Core Skills

These are the fundamental skills you need to know and do to pass this course. They provide you with the minimum acceptable foundation to continue in your studies. Achieving these skills sets you up to engage with the rest of the course. For this reason, we require you to complete assessment tasks throughout the term which demonstrate to us that you have obtained these skills in order to achieve the pass level marks for the course. We have built the course to give you MULTIPLE opportunities to achieve these tasks. **Once you have demonstrated that you have all these skills you will be awarded up to 50% of the course mark.**

Mastery Knowledge and Non-Core Skills

These are the important skills you need to complete the rest of the course. These concepts explore the applications and value of chemistry in our world and piece together the threshold knowledge to give meaning and context to your studies. Demonstrating your 'mastery' of this knowledge in your final exam and lab non-core skills quizzes will allow you to earn a merit grade (CR, DN, HD) in this course.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Final Exam Assessment Format: Individual	40%	
In-term tests Assessment Format: Individual	32%	
Laboratory Assessment Assessment Format: Individual	20%	
Quizzes Assessment Format: Individual	8%	

Assessment Details

Final Exam

Assessment Overview

The exam will focus on the “mastery” content of the syllabus, but it will also require you to remember the “threshold” concepts as a foundation for answering the mastery questions.

Duration: 2 hours

Due date: exam period

Course Learning Outcomes

- CLO1 : Apply the language of chemistry to the naming and formulae of chemical substances and to chemical reactions
- CLO2 : Perform calculations to quantify substances relating to chemical reactions
- CLO3 : Apply theory and laws to predict properties and behaviour of chemical substances

Detailed Assessment Description

The exam will focus on the “mastery” content of the syllabus, but it will also require you to remember the “threshold” concepts as a foundation for answering the mastery questions. The final exam is expected to be conducted online via Moodle, but please keep up to date with Moodle information. You will be advised of the date and time of your final exam after Monday week 9.

If you have applied for special consideration, you should arrange to make yourself available for possible further assessment. Notification of details of the further assessment will be sent via your student email address (z1234567@student.unsw.edu.au).

In-term tests

Assessment Overview

These tests have been set at a THRESHOLD level of difficulty (course pass level).

Each test will consist of 20 multiple choice questions and most questions will be drawn from the same databank as the relevant online topic quizzes, but there will also be some new questions of similar style.

The hurdle mark for these quizzes is 15/20. If you do not achieve the pass minimum of 15/20 in the first sitting, then you will be offered additional opportunities to sit the test to achieve the 15/20 pass mark. However, the maximum available grade for these additional sittings will be capped at 15/20. Please note multiple additional opportunities will be offered but we make no guarantee that you will be able to attend all of the additional sittings.

Duration: 2x 45 mins

Due date: week 5 and week 10

Course Learning Outcomes

- CLO1 : Apply the language of chemistry to the naming and formulae of chemical substances and to chemical reactions
- CLO2 : Perform calculations to quantify substances relating to chemical reactions
- CLO3 : Apply theory and laws to predict properties and behaviour of chemical substances

Detailed Assessment Description

If you do not achieve the hurdle mark of 15/20 or higher before the test deadline you will score 0 course marks for that assessment task.

In term tests will be held online during your EXAM class.

• In term test 1: week 5 (topics 2-4)

• In term test 2: week 9 (topics 5-8 note that this includes topic 8 from the week 9 online lesson).

Each test will consist of 20 multiple choice questions and most questions will be drawn from the same databank as the relevant online topic quizzes, but there will also be some new questions of similar style. If you score between 15-20 on this test, then this will be the grade you receive for that test. e.g a mark of 18/20 = 90% = 14.4/16 course marks.

If you do not achieve the pass minimum of 15/20 in the first sitting, then you will be offered additional opportunities to sit the test to achieve the 15/20 pass mark. However, the maximum available grade for these additional sittings will be capped at 15/20 (75%) which is equivalent to a maximum of 12 (out of 16) course marks for each test. Please note multiple additional opportunities will be offered but we make no guarantee that you will be able to attend all of the additional sittings.

In term test completion deadlines

• In term test 1 – 5pm Friday week 7

• In term test 2 – 5pm Friday week 10

Assessment information

Other important things to note about tests:

- Information about how in-term tests are conducted is provided in the Assessment Hub section on Moodle. You need to read this information because it explains when your tests will occur, what materials you may and may not have with you during your test, our expectations of what you may and may not do during the test, and tips on how to prepare your environment before the test.
- If you do not sit the in-term tests on the first sitting offered and do not have special consideration, then the maximum available grade available to you in subsequent sitting will be capped at 15/20 for that test.
- We do not guarantee that you will have access to the theoretical maximum number of additional sittings of the tests. Special consideration for additional opportunities will only be granted in cases where circumstances have prevented you from attending **all** sittings offered.

Laboratory Assessment

Assessment Overview

You will be assessed by your demonstrator on your competency in certain skills (core and non-core). This assessment will be done both in real–time in the laboratory (for manual lab skills) and retrospectively based on your written reports. All of the assessable skills for each experiment are listed in the lab manual, including a checklist of criteria which tell you what you have to do to be awarded each skill – see the 'Feedback' panel in the results or report section of each experiment.

Your end of term laboratory mark will be made up of a core skills component (half of the maximum laboratory mark) and a non–core (graded) skills component (up to the remaining half of the maximum laboratory mark) minus any deductions for having to borrow a lab coat or safety

eyewear.

Due date: throughout term

Course Learning Outcomes

- CLO1 : Apply the language of chemistry to the naming and formulae of chemical substances and to chemical reactions
- CLO2 : Perform calculations to quantify substances relating to chemical reactions
- CLO3 : Apply theory and laws to predict properties and behaviour of chemical substances
- CLO4 : Demonstrate proficiency in defined core chemistry laboratory skills by safely investigating chemical reactions in first-hand scientific investigations
- CLO5 : Gather, analyse, and interpret data from first-hand scientific investigations to draw valid conclusions

Detailed Assessment Description

This is described in detail the laboratory manual including details for expectations of attendance and how to book make up labs if required.

Quizzes

Assessment Overview

There are online topics quizzes for you to complete most weeks throughout term. These quizzes have been set at a THRESHOLD level of difficulty (course pass level), which is covered by the topics lessons that you are recommended to complete beforehand. Each quiz will be open for two weeks. Each quiz consists of 10 multiple choice questions. You must score 10/10 on at least one attempt before the due date, in order to successfully complete the quiz and be awarded marks for that quiz. There is no limit to the number of attempts and your highest scoring attempt will be counted. After each attempt you will be given feedback based on your answers.

Due date: throughout term

Course Learning Outcomes

- CLO1 : Apply the language of chemistry to the naming and formulae of chemical substances and to chemical reactions
- CLO2 : Perform calculations to quantify substances relating to chemical reactions
- CLO3 : Apply theory and laws to predict properties and behaviour of chemical substances

Detailed Assessment Description

If you do not meet these criteria before the due date, you will get a mark of 0 for that quiz. These quizzes will reopen after the due date to allow you opportunity for formative feedback to prepare for the in-term tests, but you will not receive course marks for these additional attempts.

• To attempt a topics quiz, log on to Moodle (https://moodle.telt.unsw.edu.au/), navigate to your course and scroll down to the relevant topic. Open the quiz you wish to attempt.

• After each attempt you will be given feedback based on your answers.

• After submitting a quiz, there will be a short time delay before you can make another attempt. It is recommended that you use this time to review concepts you struggled with before re-attempting the quiz.

For CHEM1832, we have removed the first week's test to give you the time to revise and consolidate your fundamental chemistry knowledge without early assessment requirements; this knowledge will prepare you for success in your labs. This means that there are only seven threshold quizzes, due Monday 9 am Wk 3-5 and 7-10.

General Assessment Information

Grading Basis

Standard

Requirements to pass course

CHEM1832 has the following hurdle requirements:

- You must demonstrate all of the threshold knowledge.
- You must score at least 15/20 in each In Term test before the deadline to be eligible for marks for these assessments (see section 4.3 for more details).
- Attend at least 6 laboratory classes
- You must be awarded all core laboratory skills (see laboratory manual for more details).
- You must achieve a course mark of at least 50

You will receive a course mark of between 0 and 100. A grade (HD, DN, CR, PS, UF or FL) will be awarded depending on your course mark and completion (or lack of completion) of the other criteria described above. Further information about the UNSW grading system can be found here: https://student.unsw.edu.au/grades

Course Schedule

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

Online Self-paced Threshold Topic Lessons (Monday)

A self-paced topics lesson (available on Moodle) will teach you the “threshold” concepts for the week. You should complete this lesson and attempt the associated topic quiz (see section 4 for more information about quizzes), BEFORE the first lecture of the week.

Hybrid Synchronous Lecture (Tuesday)

One dedicated lecture each week will extend the threshold knowledge from the topics lessons and assume that you have competed the lesson for that week. These classes are delivered online in an interactive lecture style format. The lecturer will work with you to combine threshold concepts and introduce extended concepts to that week’s topic. Often the lecturer will work through exam style questions and provide you with opportunities to check your understanding of these concepts throughout the class. Lecture recordings will made available on Moodle. However, there is no guarantee that the lecture recording software will capture the class correctly and the chat section of the discussion is not recorded, therefore we advise you to attend the sessions live whenever practical.

In-person Small-group Tutorials & Large-group Lectorials/Workshops (Wednesday)

Hybrid (online + in-person) delivery is great for flexible initial exposure to content, but in-person engagement is fantastic at consolidating and deepening your understanding of the content through peer-to-teacher and peer-to-peer engagement.

Therefore, to optimise your learning in CHEM1832, we have a Wednesday two-hour lectorial and a one-hour tutorial on Wednesday afternoon or Thursday morning (see your timetable).
The tutorial sessions will not be recorded, and the lectorial sessions will only have some content recorded. Note that answers to the problems set will not be provided afterwards.

It is therefore really important to prioritise in-person attendance for these classes.

To maximise your learning, you should complete the weekly online threshold topic lesson and either attend or watch the recording of the Tuesday lecture before these Wednesday in-person classes.

During the classes, we will use a variety of active teaching modes, including problem sets, Kahoots, Slido Q&A and discussion prompts. We have adapted the standard CHEM1A teaching

materials to maximise the relevance to your degree. We will work through exam-style problems, talk over challenging areas of the content all while developing your ability to interpret data, communicate chemistry concepts and apply chemistry to real world problems.

In-person Laboratory Classes (Friday)

The laboratory classes provide an opportunity to learn the concepts and practice the calculations presented in lectures. Laboratory classes are also the place to learn practical skills and they are also the place where those skills are assessed.

You must **READ THE INTRODUCTION IN THE LABORATORY MANUAL** to be aware of all the requirements for passing the laboratory component of this course. Here are some of the main points regarding laboratory classes:

- **The following items of personal protective equipment (PPE) must be worn at all times in the laboratory:**
  - **safety eyewear**
  - **a laboratory coat**
  - **fully enclosed footwear**

You will not be permitted to work in thongs or open-top shoes or sandals or without a laboratory coat or safety eyewear.

- The schedule of experiments can be found on page 4 of the lab manual.
- All experiments require pre-lab work to be completed before your lab class.
- You must attend the laboratory class shown on your official timetable.
- You must arrive at the laboratory on time or you will be excluded from the class.
- Repeat students must apply to the First Year Laboratory Coordinator if they want exemption from laboratory classes. Exemption is not automatic and is decided on a case- by-case basis.

Course Resources

Prescribed Resources

Blackman, Bottle, Schmid, Mocerino and Wille, "Chemistry," 5th Ed., Wiley. This book is available in print through the UNSW Bookshop: https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780730396673

• or in print or as a digital copy from Wiley Direct Online: https://www.wileydirect.com.au/buy/chemistry/

Aylward and Findlay, “SI Chemical Data,” 6th Ed. or later.(not essential to purchase, though recommended for chemistry majors) https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780730302469

Term 1, 2023 Laboratory Manual (available to purchase in book shop or downloadable from Moodle).

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Laura Mc Kemmish		Please email firstyearchem@unsw.edu.au unless inquiry is highly personal.		By appointment	Yes	Yes
Lecturer	Jason Harper		Lecturer (Weeks 5-10)		By appointment	No	No

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University’s conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University’s reputation and good standing.

For more information, visit the UNSW Student Code of Conduct Website.

Academic Honesty and Plagarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.
Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The Current Students site,
- The ELISE training site, and
- The Use of AI for assessments site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your

application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: https://student.unsw.edu.au/special-consideration

Important note: UNSW has a "fit to sit/submit" rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- The Current Students Gateway
- Student Support
- Academic Skills and Support
- Student Wellbeing, Health and Safety
- Equitable Learning Services
- UNSW IT Service Centre
- Science EDI Student Initiatives, Offerings and Guidelines

School-specific Information

UNSW Changes to Special Consideration: Short Extension

The School of Chemistry has carefully reviewed all of its assessments to determine whether they are suitable for automatic short extensions as set out by the UNSW Short Extension Policy. The current deadline structures for all assessment tasks in the School of Chemistry already accommodate the possibility of unexpected circumstances that may lead students to require additional time for submission. **The School of Chemistry has opted out of the UNSW Short Extension provision for all its courses,** and we have already integrated flexibility into our assessment deadlines. This decision is subject to revision in response to the introduction of new course offerings. All students may still apply for Special Consideration for any assessment via the usual procedures.

School Contact Information

Level 1, Dalton Building (F12)

W: www.chemistry.unsw.edu.au

Also see: ***Contacts and Support*** section of the course Moodle page (where applicable)