FACULTY OF SCIENCE

SCHOOL OF CHEMISTRY

CHEM1811

ENGINEERING CHEMISTRY 1A

TERM 1, 2021

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1. Information about the Course

Year of Delivery	*2021*
Course Code	*CHEM1811*
Course Name	*Engineering Chemistry 1A*
Academic Unit	*School of Chemistry*
Level of Course	*1st year Undergraduate*
Units of Credit	*6 units of credit*
Session(s) Offered	*Term 1*
Assumed Knowledge, Prerequisites or Co-requisites	*Assumed knowledge: HSC chemistry, or equivalent.*
Hours per Week	*~15*
Number of Weeks	*9 weeks in 10 week pattern*
Commencement Date	*Week 1, Monday 15th February 2021*

Summary of Course Structure (for details see 'Course Schedule')

Component	Hours per week	Day	Time	Location
Course 6 UoC→150 h	*~15*			
Lectures *Lecture 1 (1 hr)* *Lecture 2 (2 hr)* *Lecture 3 (2 hr)*	*4*	 *Mon* *Tue* *Fri*	 *11 am* *9 am* *5 pm*	 *Online* *Online* *Online*
Laboratory	*3*	*As enrolled*	*As enrolled*	*On campus*
Tutorials	*1*	*As enrolled*	*As enrolled*	*As enrolled*
Self study (online content etc.)	*~7*			
TOTAL	***~15***			

Special details	*Class locations may be changed in response to changes in student numbers, so download a fresh timetable from myUNSW, often, near the start of term.* *If you are prevented from enrolling due to a timetable clash, please submit a "Timetable Clash Request" form available from (http://unsw.to/webforms).*

2. Staff Involved in the Course

	Name	Contact Details	Consultation Times
Course Coordinator	*Dr Siobhán Wills*	*siobhan.wills@unsw.edu.au*	*By appointment*
Lecturers	*A/Prof Stuart Prescott* *Dr Siobhán Wills* *A/Prof John Stride*	*s.prescott@unsw.edu.au* *siobhan.wills@unsw.edu.au* *j.stride@unsw.edu.au*	*By appointment* *By appointment* *By appointment*
Tutors & Demonstrators	*To be allocated*	*Contact in lab/tutorial classes*	
Lab Coordinator	*Dr Ron Haines*	*r.haines@unsw.edu.au*	*By appointment*
Teaching Support Officer	*Trinah De Leon*	*Dalton 104, 9385 4651* *trinah@unsw.edu.au*	*By appointment*

3. Course Details

Course Description (Handbook Entry)	*This course builds on an introductory knowledge of chemistry (equivalent to two years of high school chemistry, such as Year 11 and 12 chemistry) to explore the engineering aspects of chemistry. The course builds from the quantum mechanical structure of atoms and 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 materials. General principles of chemical equilibrium are developed and applied to chemical reactions involving acids and bases. The practical aspects of the flow of material and energy within a process are extended into applications of the laws of thermodynamics to chemical processes and ultimately linked to chemical equilibrium. The course concludes with an overview of chemical reactions involving electron transfer, including their applications in biology, corrosion and energy storage for portable electronic devices.*
Course Aims	*This course aims to provide a sound understanding of the physical principles underlying modern chemistry and chemical engineering supported by laboratory work which also prepares a student for further studies. The course focuses on understanding the structures of atoms and molecules, relating these to the chemical properties of substances, identifying routes to control chemistry and the broader context of chemistry within engineering disciplines. On completing the course, students should also understand the connection between energy changes and other thermodynamic functions, and chemical reactions. Students should acquire a a knowledge of the concepts and language of two of the broadest classes of chemical reaction (acid-base and electron transfer). The laboratory component aims to instil an appreciation of safe working practices in a chemistry laboratory and laboratory skills widely used in chemistry and chemistry-related laboratories.*
Student Learning Outcomes	*1. Students will be able to describe atomic, molecular and intermolecular structures using fundamental theory and apply this to chemical reactions including redox and acid/base reactions.* *2. Students will be able to analyse reactions in batch and continuous processes and calculate the material and energy balances for the system based on the thermodynamic properties of fluids and solids.* *3. Students will be able to analyse the thermodynamic aspects of chemical and physical processes, predict the spontaneity of processes, and calculate the overall heat and work transfer.* *4. Students will be able to describe the principles of chemical equilibrium and apply this to phase behaviour and to chemical reactions.* *5. Students will be able to use laboratory equipment to successfully and safely perform chemical reactions and chemical analyses, reporting the results of the experiments in appropriate ways.*

Graduate Attributes Developed in this Course

Science Graduate Attributes	**Select the level of FOCUS** *0 = NO FOCUS* *1 = MINIMAL* *2 = MINOR* *3 = MAJOR*	**Activities / Assessment**
Research, inquiry and analytical thinking abilities	**3**	*Emphasised throughout course, particularly through means of practical skills gained during the Laboratory work. Critical assessment of practical reports.*
Capability and motivation for intellectual development	**2**	*Students are encouraged to be enquiring in Lecture, Tutorial and Laboratory classes.*
Ethical, social and professional understanding	**3**	*Emphasised throughout course, particularly at each submission of a laboratory report.*
Communication	**3**	*Discussion of lab techniques with demonstrator. Write-up of practicals and constructive assessment of practical reports.*

Teamwork, collaborative and management skills	**2**	*Laboratory work is directed mainly to the development of individual skills, although some experiments develop teamwork skills.*
Information literacy	**1**	*Attention is drawn to instances of relevant chemistry-related articles in the news media – especially as relating to engineering issues.*

Major Topics (Syllabus Outline)

*The syllabus in CHEM1811 is divided into **"threshold"** and **"mastery"** content. You must demonstrate that you have <u>all</u> of the threshold knowledge, in order to be eligible to pass the course. Mastery concepts are the more sophisticated parts of the syllabus; they build on the threshold material and they also bring together different parts of the syllabus. Mastery knowledge will allow you to earn a merit grade in the course, rather than just a pass.*

The syllabus consists of 9 topics. Most topics contain both "threshold" and "mastery" content. Depending on the individual lecturer's teaching style, the syllabus material may be presented in face-to-face lectures, or in online activities that you must complete before class, or a mixture of both (see Moodle for details). The 9 syllabus topics are:

1. Electronic structure of atoms *[Textbook ch. 6.1–6.3, 6.5, 6.6, 6.8]*	
THRESHOLD: *Calculate wavelength from frequency and vice versa for electromagnetic radiation.* *Sketch the shapes of s, p, and d orbitals.* *Write ground–state electron configurations for all main group elements and first–row transition metals and ions of these elements using 'arrows in boxes' and '$1s^1$' notation.*	*MASTERY:* *Use the Rydberg equation to calculate the wavelengths emitted or absorbed by a H atom.* *Calculate photon energy for electromagnetic radiation from its frequency.* *List the allowed values of the quantum numbers for orbitals in hydrogen-like atoms.*

2. Periodic properties of the elements *[Textbook ch. 7.2–7.5, 8.4]*	
THRESHOLD: *Predict electronegativities of atoms based on position in the periodic table.* *Relate the difference in electronegativity between two elements to the type of bond formed between them.*	*MASTERY:* *Predict relative sizes, ionization energies and electron affinities of atoms based on position in the periodic table.* *Identify isoelectronic species and predict relative sizes of these species.* *Predict the magnetic properties of isolated atoms and ions.*

3. Bonding *[Textbook ch. 8.5–8.7, 9.4–9.6]*	
THRESHOLD: *Draw Lewis diagrams for simple molecules. Identify species where the octet rule is violated.*	*MASTERY:* *Assign hybridized orbitals to the central atoms in molecules and polyatomic ions.*

Draw multiple Lewis structures for species where the distribution of electrons is ambiguous. *Assign formal charges to atoms in a Lewis structure and use these to select the most likely Lewis structure for a species.*	*Sketch the overlap between orbitals on adjacent atoms which gives rise to bonding.* *Identify species where extended orbital overlap gives rise to delocalization of electrons.*

4. Molecular geometry *[Textbook ch. 8.4, 9.1–9.3]*	
THRESHOLD: *Use VSEPR theory to predict the shapes of molecules and polyatomic ions.* *Predict whether molecules are polar or non–polar.*	*MASTERY:* *Calculate the dipole moments of molecules*

5. Intermolecular forces *[Textbook ch. 10.1, 10.4, 10.6, 10.9, 11.2, 11.3, 11.6, 12.1, 12.3]*	
THRESHOLD: *Describe the properties which distinguish gases from other states of matter.* *Calculate properties of gases and gas mixtures using the ideal gas equation.* *Identify the types of intermolecular forces present between particular species.* *Relate the strength of intermolecular forces to properties such as dipole moment and polarizability.* *Phase diagrams of typical substances.*	*MASTERY:* *Calculate properties of real gases and real gas mixtures.* *Gas mixtures: partial pressures, Dalton's law.* *Use the van der Waals equation to calculate the pressure of a non-ideal gas.* *Explain the origin and size of the a and b constants.* *Relate viscosity and surface tension to intermolecular forces.* *Understand the process of dissolution at the molecular level.* *Predict the relative solubility of a substance in a range of solvents.* *Surfactants and micellar structures.* *Phase diagrams of water and carbon dioxide as exceptions.*

6. Equilibrium *[Textbook ch. 16.1, 16.8]*	
THRESHOLD: *Understand the concept of chemical equilibrium.* *Apply Le Chatelier's principle to systems at equilibrium.*	*MASTERY:* *Understand how the concept of equilibrium relates to the control of reactions, maximum achievable conversions, and the Haber/Bosch and related processes.*

7. Acids and bases *[Textbook ch. 14.2, 17.2, 17.4, 17.6–17.9, 17.11]*	
THRESHOLD: *Define what is meant by an acid and a base (Bronsted definition).* *Apply general equilibrium concepts to the specific case of acid-base equilibria (Ka).* *Calculate the pH and pOH of aqueous solutions of strong and weak acids and bases.*	*MASTERY:* *Define what is meant by an acid and a base (definitions other than Bronsted).* *Recognise which salts will hydrolyse, and calculate the pH of their solutions.* *Calculate pH of buffer solutions.* *Calculate the formulation of a buffer solution of specified pH.*

8. Thermochemistry *[Textbook ch. 8.8, 14.2–14.7, 14.9–14.14, 16.7]*	
THRESHOLD: *Perform calorimetric calculations using heat capacities.* *Perform calculations involving internal energy.* *Be familiar with a range of processes for which standard enthalpies are tabulated.* *Use Hess' Law in enthalpy change calculations.* *Calculate standard enthalpy changes using standard enthalpies of formation.* *Use standard Gibbs energy change to predict spontaneity of a reaction at a specified temperature.*	*MASTERY:* *Perform calculations involving heat and work.* *Utilize average bond energies in thermochemical calculations.* *Calculate standard entropy changes using standard entropies.* *Calculate standard Gibbs energy changes using standard free energies of formation.* *Calculate standard Gibbs energy changes using standard enthalpies of formation and standard entropies.* *Use standard Gibbs energy change to calculate K at a specified temperature.* *Energy balance in a flow system.*

9. Electrochemistry *[Textbook ch. 19.1–19.3, 19.5, 19.6, 19.8]*	
THRESHOLD: *Identify redox reactions and the species which are oxidized and reduced.* *Calculate oxidation numbers for elements in molecules and ions.* *Balance redox equations using the half–equation method.* *Know the meanings of the terms: galvanic cell, anode, cathode, salt bridge, emf, standard hydrogen electrode.*	*MASTERY:* *Calculate the emf of a cell operating with non– standard concentrations.* *Relate cell emf to the equilibrium constant.* *Use a chemical understanding of corrosion to describe methods for reducing corrosion.*

	Interpret the chemical processes in corrosion in terms of redox reactions.	
Relationship to Other Courses within the Program	*This course is designed to prepare students for CHEM1821 (Engineering Chemistry 1B). Together, these two courses provide the essential chemistry knowledge that will underpin engineering students' further education.*	

4. Rationale and Strategies Underpinning the Course

Teaching strategies and rationale for learning and teaching in this course	*The course design is underpinned by "Guidelines on learning that inform teaching at UNSW" (2014) with particular emphasis as follows.* *The content of this course is delivered primarily through contexts of chemical practice in engineering professions. (6. Students become more engaged in the learning process if they can see the relevance of their studies to professional, disciplinary and/or personal contexts.)* *The course will use a variety of different learning activities including lectures, small group tutorials, self-paced computer assignments and laboratory activities. (9. Students learn in different ways and their learning can be better supported by the use of multiple teaching methods and modes of instruction (visual, auditory, kinaesthetic, and read/write).)* *The objectives of the course are clearly communicated at both an overall course level as well as with week-by-week detail. (10. Clearly articulated expectations, goals, learning outcomes, and course requirements increase student motivation and improve learning.)* *Laboratory teaching makes extensive use of peer learning to complete the experimental tasks. (14. Learning cooperatively with peers - rather than in an individualistic or competitive way - may help students to develop interpersonal, professional, and cognitive skills to a higher level.)*

5. Course Schedule

Week	Lecturer	Mastery Lecture topic	Tutorial set	Other assessment tasks	Laboratory class
1	A/Prof. Stuart Prescott	Electronic structure of atoms	1	Online quizzes (Electronic Structure of Atoms) (Periodic Properties of the Elements) *Open Monday Week 1*	For experiment schedule see page 4 of the lab manual.
2	A/Prof. Stuart Prescott	Periodic properties of the elements	2	Online quiz (Bonding) *Opens Monday Week 2*	
3	Dr Siobhán Wills	Bonding	3	Online quiz (Molecular Geometry) *Opens Monday Week 3*	
4	Dr Siobhán Wills	Molecular geometry	4	Online quiz (Intermolecular forces)) *Opens Monday Week 4*	
5	Dr Siobhán Wills	Intermolecular forces	5	**In term test 1*** Online quiz (Equilibrium) *Opens Monday Week 5*	
6	Flexibility Week *(no new content)*				
7	A/Prof. John Stride	Equilibrium	6	Online quiz (Acids and Bases) *Opens Monday Week 7*	
8	A/Prof. John Stride	Acids and bases	7	Online quiz (Thermochemistry) *Opens Monday Week 8*	
9	A/Prof. John Stride	Thermochemistry	8	**In term test 2*** Online quiz (Electrochemistry) *Opens Monday Week 9*	
10	A/Prof. John Stride	Electrochemistry	9		
11			-		

* This scheduling is **tentative**: it depends on e.g. room availability, and cannot be confirmed until after the start of term. The definitive information will be provided on Moodle.

6. Assessment Tasks and Feedback

Task	Assessment Information	% of total mark	Date	Feedback
Weekly online quizzes	**There are online quizzes for you to complete every week during the term. These quizzes cover the "threshold" content of the syllabus only.** The quizzes are open for two weeks, designed to help you learn in a consistent fashion, rather than cramming at the end of term. Each quiz consists of 10 multi-choice questions. Y**ou 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) If you do not meet these criteria before the due date, **you will get a mark of 0 for that quiz.** (1) Log on to the CHEM1811 Moodle (https://moodle.telt.unsw.edu.au/) and navigate to the relevant week and open the quiz you wish to attempt. (2) You may use any form of help that you wish, and you can make an unlimited number of attempts at each quiz,. (3) 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. (4) 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 attempts.	9 (1% each)	Weeks 1–10. The quizzes become available on Moodle progressively throughout term. You're encouraged to complete each quiz as soon as possible. If you're a strong student, you should be able to complete each quiz as soon as it becomes available. If you're a weaker student, you may need to practise and seek help in lectures and tutorials. You should complete all of the quizzes before sitting the relevant in term test.	Feedback is automatically provided within each online quiz.
In term tests	**These tests have been set at a THRESHOLD level of difficulty (course pass level).** **The HURDLE MARK for these quizzes is 15/20. If you do not achieve the hurdle mark of 15/20 or higher before the test deadline you will score 0 marks for that assessment task.** (1) Each test will consist of 20 MCQs 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. (2) The minimum mark required to pass each in term test is 15 out of 20 (75%). If you score between 15 to 20 on this test in your first sitting, this will be the grade you receive for that test. E.g. a mark of 16/20 = 80% = 12.4/15.5 course marks. (3) 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 11.6/15.5 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.	31	• In term test 1 - Friday Week 5 (Topics 1-4) • In term est 2 - Friday Week 9 (Topics 1-8) • Topic 9 will be assessed in the final exam The in term tests are tentatively scheduled to take place on Friday afternoon **on campus** in the Chemistry Digital Testing Centre. These details are subject to change, depending e.g. on room availability. See Moodle for the definitive information.	Test scores are released on Moodle, including details of which questions were answered correctly / incorrectly.

Test no.	Examinable threshold topics	Test sitting*	Test deadline
1	▪ Topics 1-4	Friday Week 5	End of Week 7
2	▪ Topics 5-8	Friday Week 9	End of Week 10
Note:	▪ Topic 9 will be assessed in the final exam		

** Tests will be held on campus in several different venues. Please check Moodle for **your** allocated venue.*

Other important things to note about tests:

▪ Information about how In Term Tests are conducted is provided in the In Term Tests 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	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, hence they are a compulsory component of all first year chemistry courses. **You must pass the laboratory component of CHEM1811 in order to be eligible to pass the course.** 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: (1) No students with an unsatisfactory laboratory record (either due to poor laboratory work or to inadequate attendance) will be considered for a pass in the course. **You must attend at least 6 out of 8 of the scheduled laboratory classes in the term.** Medical certificates or other documentation do not compensate for absences. (2) Assessment in the laboratory is done on a "skills" basis. **You must demonstrate that you've acquired all of the "core skills" in order to be eligible to pass the course.** The remaining "non-core (graded) skills" will take you from 10/20 up to 20/20 for the laboratory component of the course. (3) Safety eyewear, a laboratory coat and fully enclosed footwear must be worn in the laboratory. You will not be permitted to work in thongs or open-top shoes or sandals or without a laboratory coat and safety eyewear. (4) The schedule of experiments is found on page 4 of the laboratory manual (at the back of this course pack). (5) All experiments require pre-lab work to be completed before your lab class. (6) 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. (7) 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. (8) Work is either marked in lab, or a report is submitted for marking (according to the schedule in the laboratory manual). Laboratory reports should be submitted in the pigeonhole mailboxes. A signed cover sheet must be attached to the front of each lab report submitted. Cover sheets are supplied printed in the lab manual, as is the first page of each lab report to be submitted.	20	Weeks 1–10 (see lab manual for schedule)	Continuous verbal feedback is provided by the assigned demonstrator during and based on your written reports.

Final Exam	The final exam is of 2 hours' duration. It 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 will be conducted online via Moodle.** You will be advised of the date and time of your final exam after Monday week 9. A mock exam paper, plus an associated marking guide, will be provided on Moodle for your revision purposes. 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). Information about how final exams are conducted is provided later in this document.	40	May	Specific feedback on the final exam is not automatically provided. Instead, the final mark for the course is awarded.

7. Additional Resources and Support

Need help?	*There are several people who can help you with problems. The appropriate person may differ depending on the problem:* • *First, check the "Important Announcements" and the "Q&A" forums on Moodle – your question may have been asked and answered before.* • *For problems relating to lectures – post your question on Moodle, or contact your lecturer.* • *For tutorial problems − post your question on Moodle, or ask your tutor during tutorial classes.* • *For laboratory problems − post your question on Moodle, or see your demonstrator, or alternatively ask your tutor (if time permits) in tutorials.* • *For course related and/or personal difficulties that may be affecting your performance in first year chemistry − see the Chemistry Student Centre, (Room 105, Dalton Building).* • *For all other enquires (including Moodle issues) − contact Trinah De Leon, our Teaching Support Admin Officer (trinah@unsw.edu.au).*
Textbook	*Brown, Lemay, Bursten, Murphy, Woodward, Langford, Sagatys, George, "Chemistry: The Central Science," 3rd Ed, Pearson. This can be purchased from the UNSW Bookshop and accessed through a Leganto Link on Moodle.*
Course Manual	*A printed copy of the CHEM1811 Laboratory Manual (2021) is required; this can be purchased from the UNSW Bookshop. An electronic version is available on Moodle along with the Course Outline and Tutorial Set.*
Recommended Internet Sites	*The CHEM1811 Moodle site contains course information, the assessment schedule, the syllabus, copies of some (but not all) lecture notes and course materials, lecture recordings, and sample exam questions.* *The UNSW School of Chemistry website (http://www.chem.unsw.edu.au/local) contains direct links to many important chemistry-related websites and databases.*
Societies	*UNSW Students of Chemistry Society (SOCS) UNSW: http://www.chem.unsw.edu.au/schoolinfo/socs.html* *UNSW Chemical Society* *Royal Australian Chemical Institute http://www.raci.org.au/*

8. Required Equipment, Training and Enabling Skills

Equipment Required	*Laboratory coat, ASA-approved safety glasses, sensible clothing, and enclosed footwear, are required in all School of Chemistry laboratories.*
Enabling Skills Training Required to Complete this Course	*Compulsory computer-delivered Safety & Ethics exercise completed in Gibson Computer laboratory before the first Laboratory Session.* *All students must complete a chemical safety pre-lab exercise before each lab.*

9. Course Evaluation and Development

Mechanisms of Review	Last Review Date	Comments or Changes Resulting from Reviews
Course Design and Implementation	*2017*	*The course was designed in a collaborative fashion by staff from the School of Chemistry and the School of Chemical Engineering.*
CATEI	*N/A*	*N/A*

10. Administration Matters

Expectations of Students	***ATTENDANCE*** *Students are expected to attend all their scheduled classes (lectures, tutorials and laboratories) in all first year chemistry courses.* *Attendance will be recorded at laboratory and tutorial classes. In particular, you must attend a minimum of 6 out of 8 scheduled laboratory classes for a satisfactory performance in the laboratory component of the course.* ***If you miss more than two laboratory classes you will automatically fail the course.*** *See the Laboratory Manual for more details on attendance and all other aspects of the laboratory classes.* ***WORKLOAD*** *A guide to the workload for this course is that you should spend an hour of independent study for each contact hour. This time should be spent reviewing online and lecture material, consolidating notes, completing tutorial problems and preparing for laboratory classes.* ***COMMUNICATION WITH STUDENTS*** *Announcements relevant to the course will be made in lectures. Hence missing lectures, or arriving late, may cause you considerable difficulties. Students should also consult notices posted in the Moodle "Important Announcements" Section.* *Communication via your student email account (z1234567@unsw.edu.au) will be used for important announcements and late changes to arrangements.* ***Check your UNSW email at least every 2 days!*** *Also, make sure that your account does not become 'over-quota' (i.e. full) or, if you have messages redirected, that the redirection is functioning.*
Assessment Procedures and UNSW Assessment Policy	***SPECIAL CONSIDERATION*** *If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration 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 be assessed, you will be contacted via your student email address to advise 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 which affect your ability to study, you do not sit an examination or submit an assessment which 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. You will be required to provide evidence to support your Special Consideration application and it is likely that a back to source check will be carried out on your documentation.*

SUPPLEMENTARY ASSESSMENT

A supplementary examination may be offered in cases where you have applied for and received special consideration. The supplementary exam period for this term is ***Monday 24 May to Friday 28 May 2021 inclusive****. The time, date and venue of your test will be confirmed via student email approximately 1 week before the exam date. All students granted a supplementary exam are expected to make themselves available to attend. No alternative dates or times will be guaranteed. A supplementary examination may consist of a written paper and in some cases an oral examination. Averages will not be given in place of a final exam mark or supplementary exam mark.*

PROCEDURES FOR EXAMINATIONS

(1) You may not be permitted to sit an examination if you do not have your UNSW student I.D. card with you.

(2) You should endeavour to be in attendance at the given location well before the "doors open" time.

(3) You will be admitted to the room from the time listed as "doors open".

(4) You may take in only pens, pencils, electronic calculator listed in the UNSW list of approved calculators, and drawing instruments (NB. a pen, a 2B-pencil, and eraser are essential for multi-choice exams.) No other materials may be taken into the room unless officially notified; if you do bring such material along with you on the day, it must be left outside the examination room. You should note that neither the Chemistry Student Centre, nor the University, will accept responsibility for any material left outside the examination room. Hence we urge very strongly that you do not bring such items with you.

(5) Once you are inside the room normal University Examination rules will apply.

(6) You ***may not bring*** *into the examination room:*

- *a mobile phone, music player, mp3 player or iPod, or any other communication device*
- *a bag or bags*
- *paper, books, etc*
- *electronic or discipline-specific dictionaries.*

(7) You should take your seat in the room following the instructions given by the supervisor and the invigilators.

(8) Immediately you are seated you must place your UNSW student I.D. card, "photo" side up, on your desk. Your card must remain on your desk throughout the examination, and be visible at all times.

(9) When you receive your examination paper, you must NOT turn this paper over, nor write anything on it until you are instructed to do so. This includes your name and ID details.

(10) When permitted to write, you must enter your ID details, as instructed, on the test paper and on the Generalised Answer Sheet. Marks will be deducted if you do not enter both your name and student number as required for authentication and for scanning purposes.

(11) Each answer must be recorded on the Generalised Answer Sheet by using pencil to fill in the oval corresponding to your chosen answer. The answers entered on the Generalised Answer Sheet will be used to determine your test mark.

(12) You will not be permitted to leave during this time. If you finish early you must remain seated in your place until the end of the allocated time.

(13) You will not be admitted later than fifteen (15) minutes past the "examination commences" time.

(14) If you have any query, etc. raise your hand and keep it raised until one of the invigilators attends to you.

(15) A "10 minutes to go" warning will be given.

(16) At the end of the allocated time a "pens down - cease writing" command will be given. ***You must cease writing immediately, place your pen on the table, and close your examination paper.*** *Remember that if you do not heed this command, disciplinary action may be taken against you. You must remain seated in your place until instructed to leave by the supervisor.* ***NOTE: At this stage, if you have not written your name and student number on your paper, you will NOT be given extra time to do so. It is entirely your own responsibility to make sure your details are on your exam paper BEFORE the "pens down" instruction is given.***

GENERAL ARRANGEMENTS FOR UNSW EXAMINATIONS

(1) The Final Examination and Supplementary Examinations will be conducted by UNSW Examination Team.

(2) Check the Examination Timetable via the link on the myUNSW website for the location and time of the final examination. Make sure you know where the examination is to be held – it may be in a location you have never attended before (e.g. Randwick Racecourse). Allow plenty of time to get to the examination venue on the day.

	(3) 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). *(4) If you were present at the final examination and are granted a supplementary examination due to special consideration, but fail to be present for the supplementary examination, then your mark for the final examination will be used in determining your overall mark.* *(4) Notices stating the period during which the supplementary examination will be held are given earlier in this document and will also be displayed on Moodle prior to the end of term. Students making travel arrangements for the holiday period should take this into account.*		
Occupational Health and Safety	*Information on relevant Occupational Health and Safety policies and expectations at UNSW: https://safety.unsw.edu.au/staff-student-resources/students* *To be admitted to a laboratory, you must wear ASA-approved safety eyewear, a lab. coat and covered shoes (no thongs, open sandals or clogs). You must also complete all safety pre-lab. work, or other prescribed preparation relating to carrying out safe laboratory work. Visitors are not allowed to undergraduate laboratories without the permission of the laboratory supervisor.*		
Disability Support Services	*Students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course Convenor prior to, or at the commencement of, their course, and with Disability Services (9385-4734 or https://student.unsw.edu.au/disability).*		
Student Complaint Procedure	**School Contact**	**Faculty Contact**	**University Contact**
	A/Prof. John Stride, Dalton Building, Room 131 j.stride@unsw.edu.au Tel: 9385-4672	A/Prof. Alison Beavis Deputy Dean (Education) a.beavis@unsw.edu.au Tel: 9385-8223	Student Conduct and Appeals Officer (SCAO) within the Office of the Pro-Vice-Chancellor (Students) and Registrar studentcomplaints@unsw.edu.au Tel: 9385-8515, or University Counselling and Psychological Services Tel: 9385 5418

11. UNSW Academic Honesty and Plagiarism

Academic Misconduct

Students and staff are, of course, governed by the normal laws which regulate our everyday lives. But in addition the University has its own code of rules and conduct, and can impose heavy penalties on students who breach them. Penalties range from failure in a subject, loss of privileges, fines, payment of compensation, and suspension, to exclusion from study for a certain period or even permanent expulsion from the University.

It is important to realise, however, that misconduct within the University covers a much wider field than simply behaviour which is offensive or unruly, or which may cause damage to other people or property. Misconduct which may lead to a student being disciplined within the University includes anything regarded as academic misconduct *according to current academic usage*, as well as any conduct which impairs the reasonable freedom of other persons to pursue their studies or research or to participate in University life.

It is most important that students realise just how broad the definition of Academic misconduct maybe. It certainly covers practices such as cheating or copying or using another person's work. Sometimes, however, practices which may have been acceptable at school are considered to be misconduct according to current Academic usage within a University. For example academic misconduct can occur where you fail to acknowledge adequately the use you have made of ideas or material from other sources (see the UNSW Student Guide for examples).

The following are some of the actions which have resulted in students being found guilty of academic misconduct in recent years:

- impersonation in examinations;

- failing to acknowledge the source of material in an assignment;
- taking of unauthorised materials into an examination;
- submitting work for assessment knowing it to be the work of another person;
- improperly obtaining prior knowledge of an examination paper and using that knowledge in the examination.

Students found guilty of academic misconduct are usually excluded from the University for two years. Because of the circumstances in individual cases, the period of exclusion can range from one semester to permanent exclusion from the University.

What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one's own. Examples include:*

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:

www.lc.unsw.edu.au/resources

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne