CBMS107

Foundations of Chemical and Biomolecular Sciences 1

S1 Day 2018

Dept of Chemistry & Biomolecular Sciences

Contents

General Information

Unit convenor and teaching staff
Unit Convenor
Dr Damian Moran
damian.moran@mq.edu.au
F7B 329
Students are encouraged to arrange a meeting via email.

Lecturer
A/Prof Joanne Jamie
joanne.jamie@mq.edu.au
F7B 231
Students are encouraged to arrange a meeting via email.

Lecturer
Prof Helena Nevalainen
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E8C 302
Students are encouraged to arrange a meeting via email.

Credit points
3

Prerequisites

Corequisites

Co-badged status

Unit description
Foundations of Chemical and Biomolecular Sciences 1 introduces students to the principles and practical aspects of the molecular sciences, from the smallest of chemical substances through to the molecules of life – the biomolecules. This unit does not assume prior knowledge of chemistry or biology and is ideal for any student that wants to understand the atomic and molecular world within and around them. It will commence with the language of chemistry by introducing atoms and molecules and elements and compounds and using representative inorganic and organic compounds, including biomolecules, to show how their structures, functions and reactions are described. It will build on this language to allow prediction of the reactivity, behaviour and function of different classes of compounds, with a focus on acids and bases and organic compounds including biomolecules. Contemporary applications will be highlighted to show the role of chemical and biomolecular sciences in our lives, now and in the future, including in helping to achieve a sustainable environment, understanding health and disease, and advancing new molecular technologies. Practical sessions and tutorials will reinforce learning throughout this unit.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.
Apply knowledge of chemistry concepts to describe the structure and properties of inorganic and organic compounds to predict their reactivity, behaviour and function.
Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.
Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.
Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.
Discuss the central role and impact of the chemical and biomolecular sciences in our lives and its modern applications.

General Assessment Information

Your marks will be displayed at iLearn, including your practical class and tutorial class

attendance records. It is your responsibility to regularly verify that the marks and attendance records displayed at iLearn (Tools -> Grades) are correct.

Attendance at practical classes:

- The practical classes are a participation hurdle and failure to participate in any of the four practical classes will result in you failing CBMS107. If you are unable to attend a practical class, please contact the Unit Convenor, Damian Moran (damian.moran@mq.edu.au) immediately. In addition, you must submit a Special Consideration request at ask.mq.edu.au to justify your absence.
- Please note that if you miss your practical class, we are not required to offer you a catch up class.

Attendance at the final exam*:

- The final exam is a hurdle assessment. If you are/were unable to attend the final exam, you must immediately submit a Special Consideration request at ask.mq.edu.au.

Attendance at tutorial classes:

- The tutorial classes are a participation hurdle and failure to participate in at least 10 of the 13 weekly tutorials will result in you failing CBMS107. If you are unable to attend a tutorial class, please contact the Unit Convenor, Damian Moran (damian.moran@mq.edu.au) immediately. In addition, you must submit a Special Consideration request at ask.mq.edu.au to justify your absence.

Final grade:

- Your final grade will be based on the mark from the aggregation of your individual assessments (practical, quizzes, mid-session test, final exam), noting that you must satisfy all hurdles (practical classes & final exam) to pass CBMS107 overall.

* **Information on Supplementary Exams:** If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. You can check the supplementary exam information page on FSE101 in iLearn (bit.ly/FSESupp) for dates, and approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

The final CBMS107 examination is a hurdle. If you are given a second opportunity to sit the final examination as a result of failing to meet the minimum mark required, you will be offered that

chance during the supplementary examination period and will be notified of the exact day and time after the publication of final results for the unit.

Assessment Tasks

Name	Weighting	Hurdle	Due
Practical Classes	20%	Yes	Every practical
Quizzes	15%	No	Weeks 4, 9 and 12
Mid-Session Test	15%	No	Week 7
Final Examination	50%	Yes	University examination period
Tutorial Classes	0%	Yes	Every tutorial class

Practical Classes

Due: **Every practical**
Weighting: **20%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

The pre-practical exercises, performance in the practical, the practical report, and the post-practical exercises will be used to calculate the final practical mark. The assessment tasks progressively build on skills and knowledge developed throughout the course.

It is very important that you understand that the practical classes are a hurdle assessment, which means that **participation in all four practicals is required to pass CBMS107.** Should you miss your practical class, please **immediately contact the Unit Convenor, Damian Moran (damian.moran@mq.edu.au).** You must also **submit a Special Consideration request at ask.mq.edu.au** no later than five (5) working days after the date of your missed practical class.

On successful completion you will be able to:

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.
- Apply knowledge of chemistry concepts to describe the structure and properties of inorganic and organic compounds to predict their reactivity, behaviour and function.
- Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.
- Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.

- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.
- Discuss the central role and impact of the chemical and biomolecular sciences in our lives and its modern applications.

Quizzes

Due: **Weeks 4, 9 and 12**
Weighting: **15%**

There will be three quizzes which you will find assist you in revising the course material as the course progresses.

On successful completion you will be able to:

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.

Mid-Session Test

Due: **Week 7**
Weighting: **15%**

There will be a mid-session test in Week 7 that will be designed to give you specific feedback on your understanding of the topics up to this stage of the unit.

On successful completion you will be able to:

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.
- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.

Final Examination

Due: **University examination period**
Weighting: **50%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

The final exam (50%) will be 3 hours in length with 10 minutes reading time. It is designed to address specific understanding of all topics presented within the course and to show that the knowledge obtained can be applied to new problems.

The final exam is a hurdle assessment and you will need to get >= 40% in the final exam to meet

the hurdle. In the event that you make **a serious first attempt at the final exam**, you will be provided with an opportunity to sit a new final exam. The faculty define a serious attempt as a mark of 10% below the hurdle, which in this instance is a mark between 30-40%. **You will NOT be given a second attempt to pass the exam if you get below 30% in your first attempt.**

On successful completion you will be able to:

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.
- Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.
- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.

Tutorial Classes

Due: **Every tutorial class**
Weighting: **0%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

It is very important that you understand that the tutorial classes are a hurdle and that **participation in at least ten (10) tutorial classes is required to pass CBMS107.** Should you miss your tutorial class, please **immediately contact the Unit Convenor, Damian Moran (damian.moran@mq.edu.au).** You must also **submit a Special Consideration request at ask.mq.edu.au** no later than five (5) working days after the date of your missed tutorial class.

On successful completion you will be able to:

- Apply knowledge of chemistry concepts to describe the structure and properties of inorganic and organic compounds to predict their reactivity, behaviour and function.
- Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.

Delivery and Resources

Communication

- Information will also be sent by email to your student email account on a frequent basis.
- In addition to email communication, the CBMS107 iLearn site will be used to communicate important information to you.
- We cannot overstate the importance of checking your email and the CBMS107 iLearn site regularly.

Classes

See https://timetables.mq.edu.au/2018 for class times and locations.

- **Lectures:**

While we hope that you will join us for lectures, it is important to note that lectures will be live streamed, as well as recorded (available at the CBMS107 iLearn site). Lectures will be used to emphasise key points and concepts. Where possible, studying lecture materials before coming to class will help you get the most out of the lectures.

- **Tutorials:**

During tutorials, the problems assigned (available at the CBMS107 iLearn site) will be discussed. We recommend that you work on the tutorial problem sets before coming to class, so that you can take full advantage of the exercises.

- **Practicals**:

The practical classes for CBMS107 are run in E7B320 and E7B308 (14SCO room 308). Safety glasses, laboratory coats and disposable gloves are supplied. You will not be allowed to enter the laboratory unless you are wearing enclosed footwear. We cannot guarantee that the lab coats that we supply are in good condition, as they are shared across the unit. We recommend that you consider purchasing your own laboratory coat, particularly if you are a science major.

Teaching and Learning Strategy

CBMS107 is a 3 credit point half year unit and will require an average of 10 hours of work per week (contact hours plus self study time). For students with weak chemistry backgrounds, more time than the 10 hours per week will probably be necessary to perform satisfactorily in this unit.

CBMS107 consists of 3 hours of lectures, a 1 hour tutorial every week, and a 4 hour practical class every 3rd week. CBMS107 is designed to introduce you to the principles of the molecular sciences, including developing an understanding of the practical skills required to undertake simple chemistry experiments in an efficient and safe manner. The lecture material, tutorials and laboratories complement each other, and along with quizzes (in-class and on-line), have been developed to increase your understanding of the topics so you can achieve the learning outcomes.

The unit expectation is that you will:

· Attend all lectures or when not possible listen to the recorded lectures

· Attend all tutorials and attempt the set exercises

· Demonstrate reasonable competence in all practical preparation exercises and attend each practical class

· Actively engage in the practical and coursework assessment tasks

· Spend an average of no less than 3 hours per week of private study in addition to class

contact

If you prepare and attend all components of the unit and work consistently and continuously throughout the semester, you should be able to develop a strong understanding of the general chemistry and organic chemistry presented, and perform satisfactorily in this unit. Students who try to memorise just before exams typically do not do well in this unit. Instead a deeper understanding of the concepts is required.

· **Lectures** will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. Most lecture material will be available at the unit iLearn site, while other material will be provided in the lecture class. **Based on observations of related units, we know that students fall behind and perform poorly if they do not attend the lecture classes.** Learning is an active process, and as such, you must engage with the material.

· **Tutorials** are run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify areas that need assistance is highly recommended. Attendance records will be kept. While tutorials do not contribute formally to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool.

· **Practical classes** are designed to develop basic laboratory skills, general safety practices and critical and analytical thought. Pre-practical questions are designed to make sure you are ready for the practical work and have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record your experimental observations and to present your calculations in a detailed manner. Post-lab exercises assess your understanding of the theory behind the experiments conducted, with sets of related problems.

Learning and Teaching Activities

Lectures

Lectures will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. We encourage you to download the lecture material available at the unit iLearn site and bring it into lectures, so you can spend most of the time listening to the lecturer rather than transcribing. Please do not assume that the lecture notes or recordings are a suitable substitute for attending the lectures. Historically, students that do not attend the lecture classes, fall behind and perform poorly. Learning is an active process, and as such, you must engage with the material. For example, downloading and reading the lecture notes and relevant sections of the textbook (and beyond) before and after lectures is strongly recommended.

Tutorials

Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past

experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.

Practical classes

Practical classes are designed to develop basic laboratory skills, general safety practices and critical and analytical thought. Pre-practical questions are designed to make sure you are ready for the practical work and that you have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record your experimental observations and to present your calculations in a detailed manner. Post-lab exercises are designed to assess your understanding of the theory behind the experiments conducted.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Undergraduate students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your

student email address and will be made available in eStudent. For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Assessment tasks

- Practical Classes
- Final Examination

Learning and teaching activities

- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.
- Discuss the central role and impact of the chemical and biomolecular sciences in our lives and its modern applications.

Assessment task

- Practical Classes

Learning and teaching activity

- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.
- Practical classes are designed to develop basic laboratory skills, general safety practices and critical and analytical thought. Pre-practical questions are designed to make sure you are ready for the practical work and that you have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record

your experimental observations and to present your calculations in a detailed manner. Post-lab exercises are designed to assess your understanding of the theory behind the experiments conducted.

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcome

- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.

Assessment tasks

- Practical Classes
- Quizzes
- Mid-Session Test
- Final Examination

Learning and teaching activities

- Lectures will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. We encourage you to download the lecture material available at the unit iLearn site and bring it into lectures, so you can spend most of the time listening to the lecturer rather than transcribing. Please do not assume that the lecture notes or recordings are a suitable substitute for attending the lectures. Historically, students that do not attend the lecture classes, fall behind and perform poorly. Learning is an active process, and as such, you must engage with the material. For example, downloading and reading the lecture notes and relevant sections of the textbook (and beyond) before and after lectures is strongly recommended.
- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations

from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.
- Apply knowledge of chemistry concepts to describe the structure and properties of inorganic and organic compounds to predict their reactivity, behaviour and function.
- Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.
- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.

Assessment tasks

- Practical Classes
- Quizzes
- Mid-Session Test
- Final Examination
- Tutorial Classes

Learning and teaching activities

- Lectures will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. We encourage you to download the lecture material available at the unit iLearn site and bring it into lectures, so you can spend most of the time listening to the lecturer rather than transcribing. Please do not assume that the lecture notes or recordings are a suitable substitute for attending the

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- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.
- Practical classes are designed to develop basic laboratory skills, general safety practices and critical and analytical thought. Pre-practical questions are designed to make sure you are ready for the practical work and that you have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record your experimental observations and to present your calculations in a detailed manner. Post-lab exercises are designed to assess your understanding of the theory behind the experiments conducted.

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcome

- Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.

Assessment tasks

- Practical Classes
- Quizzes
- Mid-Session Test
- Final Examination
- Tutorial Classes

Learning and teaching activities

- Lectures will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. We encourage you to download the lecture material available at the unit iLearn site and bring it into lectures, so you can spend most of the time listening to the lecturer rather than transcribing. Please do not assume that the lecture notes or recordings are a suitable substitute for attending the lectures. Historically, students that do not attend the lecture classes, fall behind and perform poorly. Learning is an active process, and as such, you must engage with the material. For example, downloading and reading the lecture notes and relevant sections of the textbook (and beyond) before and after lectures is strongly recommended.
- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.
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Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and

reactions for representative inorganic and organic compounds including biomolecules.
- Apply knowledge of chemistry concepts to describe the structure and properties of inorganic and organic compounds to predict their reactivity, behaviour and function.
- Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.

Assessment tasks

- Practical Classes
- Quizzes
- Mid-Session Test
- Final Examination
- Tutorial Classes

Learning and teaching activities

- Lectures will be presented formally, although quizzes and general questions may be asked in class, demonstrations provided, and examples of problems worked through, to strengthen and increase understanding of the concepts. We encourage you to download the lecture material available at the unit iLearn site and bring it into lectures, so you can spend most of the time listening to the lecturer rather than transcribing. Please do not assume that the lecture notes or recordings are a suitable substitute for attending the lectures. Historically, students that do not attend the lecture classes, fall behind and perform poorly. Learning is an active process, and as such, you must engage with the material. For example, downloading and reading the lecture notes and relevant sections of the textbook (and beyond) before and after lectures is strongly recommended.
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Post-lab exercises are designed to assess your understanding of the theory behind the experiments conducted.

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Use the language and principles of chemical science to be able to explain the composition and properties of matter and name and write (or describe) structures and reactions for representative inorganic and organic compounds including biomolecules.
- Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.
- Acquire basic laboratory skills in the chemical and biomolecular sciences, including an understanding of general laboratory safety procedures.
- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.

Assessment tasks

- Practical Classes
- Mid-Session Test
- Final Examination
- Tutorial Classes

Learning and teaching activities

- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.
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you are ready for the practical work and that you have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record your experimental observations and to present your calculations in a detailed manner. Post-lab exercises are designed to assess your understanding of the theory behind the experiments conducted.

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- Apply knowledge of chemistry concepts to describe the structure and properties of inorganic and organic compounds to predict their reactivity, behaviour and function.
- Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.
- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.
- Discuss the central role and impact of the chemical and biomolecular sciences in our lives and its modern applications.

Assessment task

- Practical Classes

Learning and teaching activity

- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.
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you are ready for the practical work and that you have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record your experimental observations and to present your calculations in a detailed manner. Post-lab exercises are designed to assess your understanding of the theory behind the experiments conducted.

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcomes

- Use the principles of chemical and biomolecular sciences to solve problems, process and interpret data, and have an understanding of where to apply these principles.
- Record and analyse scientific data, as well as communicate conclusions using the basic elements of scientific report preparation.
- Discuss the central role and impact of the chemical and biomolecular sciences in our lives and its modern applications.

Assessment task

- Practical Classes

Learning and teaching activity

- Tutorials will be run to assist your understanding of the course material. Attempting the questions before the tutorial class to identify what assistance you need is highly recommended. Past experience has demonstrated that there is a strong correlation between success in the unit and participation in all activities, including the tutorial classes. While tutorials do not contribute to your mark, anonymous teaching evaluations from past students have identified tutorials as a valuable learning tool. Attendance records will be kept.
- Practical classes are designed to develop basic laboratory skills, general safety practices and critical and analytical thought. Pre-practical questions are designed to make sure you are ready for the practical work and that you have grasped the relevant theory and necessary safety practices. In-lab work is designed to teach you to appropriately record your experimental observations and to present your calculations in a detailed manner. Post-lab exercises are designed to assess your understanding of the theory behind the

experiments conducted.

Changes from Previous Offering

- The final examination hurdle has been amended: *The final exam is a hurdle assessment and you will need to get >= 40% in the final exam to meet the hurdle. In the event that you make **a serious first attempt at the final exam**, you will be provided with an opportunity to sit a new final exam. The faculty define a serious attempt as a mark of 10% below the hurdle, which in this instance is a mark between 30-40%. **You will NOT be given a second attempt to pass the exam if you get below 30% in your first attempt.***
- A hurdle requirement has been introduced for tutorial class participation: *The tutorial classes are a participation hurdle and failure to participate in at least 10 of the weekly tutorials will result in you failing CBMS107. If you are unable to attend a tutorial class, please contact the Unit Convenor, Damian Moran (damian.moran@mq.edu.au) immediately. In addition, you must submit a Special Consideration request at ask.mq.edu.au to justify your absence.*

Non-attendance of assessment

Non-Attendance for Assessable Tasks: If you are unable to attend a practical class, tutorial class, quiz or exam (mid-session test or final exam) due to short-term, serious and unavoidable circumstances, **you must submit a Special Consideration request at ask.mq.edu.au** no later than five (5) working days after the assessment task date or due date. Please also **immediately contact the Unit Convenor, Dr Damian Moran (damian.moran@mq.edu.au).**

Information on Supplementary Exams: If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. You can check the supplementary exam information page on FSE101 in iLearn (bit.ly/FSESupp) for dates, and approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

The final CBMS107 examination is a hurdle. If you are given a second opportunity to sit the final examination as a result of failing to meet the minimum mark required, you will be offered that chance during the same supplementary examination period and will be notified of the exact day and time after the publication of final results for the unit.

Teaching staff

- **Dr Damian Moran**, Unit Convenor, F7B 329, ph 9850 8299, email

damian.moran@mq.edu.au

- **A/Prof Joanne Jamie**, Lecturer, F7B 231, ph 9850 8283, email joanne.jamie@mq.edu.au

Dr Damian Moran is the coordinator of this unit and should be consulted if you have administrative or organisational problems.

Dr Damian Moran and A/Prof Jamie will be presenting the lectures.

The staff have an open door policy for any questions best dealt in person on their topics. However, **you are strongly advised to organise an appointment first by emailing beforehand (put CBMS107 in the header of the email message)**.