



CBMS123

Alchemy, Drugs and the Quest for Immortality

S2 External 2018

Dept of Chemistry & Biomolecular Sciences

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	2
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	5
<u>Policies and Procedures</u>	6
<u>Graduate Capabilities</u>	7
<u>Changes from Previous Offering</u>	11
<u>Changes since First Published</u>	11

Disclaimer

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General Information

Unit convenor and teaching staff

Damian Moran

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

Alchemy is the art and science of converting one substance into another, and it has been an important factor in shaping our society. Metals, ceramics, drugs and plastics have changed and enhanced our lifestyle. Drugs, fertilisers and pesticides have saved millions of lives, but not without some unforeseen environmental or social problems. When this happens, decisions have to be made and costs weighed against benefits. An appreciation of such issues is needed for better understanding the important problems that face society. This unit explores the way chemistry affects our lives, and the way chemists work things out. The unit does not aim to teach chemistry but looks at the impact that chemical sciences has had on civilisation and where the latest molecular innovations are likely to lead us. The commercial significance of key biological processes and industries is addressed, emphasising the Australian context. The unit also examines connections between chemistry and other scientific fields as diverse as psychology, finance, medicine, environmental studies and astronomy, as well as revealing aesthetic and philosophical aspects of chemistry. This unit is taught completely online with a combination of topical lectures and multimedia material.

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:

Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry

Understand the role of chemistry as the source and solution of issues (eg environmental)

confronting society

Be able to discuss important issues that have a chemical and/or biomolecular basis from a rational perspective

Be able to critically evaluate non-specialist literature that discuss chemical and biomolecular issues

General Assessment Information

NOTE: It is expected that students will complete ALL ASSESSMENT COMPONENTS in this unit. You do not need to have passed each assessment to pass the unit, but it is expected that all assessments are attempted.

General Submission Procedure: Essays and peer-assessments must be submitted via TurnItIn at the correct link provided on the Unit iLearn site. Please ensure that you use the correct link for your assessment submission!

Extensions: Extensions must be sought in writing (email) from the Unit Convenor (Dr Damian Moran) in advance of the due date. Extensions will only be granted if they are supported by an APPROVED special consideration request from ask.mq.edu.au.

Late submissions: Assessments submitted after the due date/time without an approved extension will incur a Late Penalty of ONE raw mark per day late (including each day at the weekends). This means that if your raw score on an assessment was 20/20 and your assessment was submitted two days late, you will receive a final mark of 18/20. Essays submitted two weeks or more after the deadline (with no extension) will not be accepted except in special circumstances where you have lodged a special consideration request and it has been approved.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Workshop</u>	20%	No	13 Aug, 27 Aug, 8 Oct & 5 Nov
<u>Essay</u>	50%	No	10 Sept & 22 Oct
<u>Essay critique</u>	20%	No	10 Sept & 22 Oct
<u>Peer assessment</u>	10%	No	17 Sept & 29 Oct

Workshop

Due: **13 Aug, 27 Aug, 8 Oct & 5 Nov**

Weighting: **20%**

Four multiple-choice quizzes (5% each) marked using certainty based marking.

The workshops are due at 9 am on Monday 13th August (Workshop 1), 27th August (Workshop

2), 8th October (Workshop 3) and 5th November (Workshop 4).

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Essay

Due: **10 Sept & 22 Oct**

Weighting: **50%**

Two essays (25% each) of 1000 words MAXIMUM.

The first essay is due at 9 am on Monday 10th September and the second essay is due at 9 am on Monday 22nd October.

Essays will be assessed by the following criteria: Mechanics (length, structure, written expression); Comprehension; Argument (critical analysis and purpose); and Sources (relevance and proper citation practices). A marking rubric and detailed task outline for this task will be supplied at the iLearn homepage.

On successful completion you will be able to:

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Essay critique

Due: **10 Sept & 22 Oct**

Weighting: **20%**

A video critique to accompany each essay submission (10% each).

The first video-critique is due at 9 am on Monday 10th September and the second video-critique is due at 9 am on Monday 22nd October.

Video-critiques will be assessed by the following criteria: Content/Organization (logical introduction to the essay that contributes to the viewers understanding of the topic); Argument (critical analysis and purpose); and Production Quality (video editing, graphics and timing). A marking rubric and detailed task outline for this task will be supplied at the iLearn homepage.

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Peer assessment

Due: **17 Sept & 29 Oct**

Weighting: **10%**

Peer assessment of submitted essay-critique videos (two rounds, 5% per round).

Following the deadline for submission of essay 1, students will be assigned three of the video critiques submitted by their peers, which they will be tasked with rating. The peer-assessment process will be anonymous. A marking rubric and detailed task outline for this task will be supplied at the iLearn homepage.

The deadline for submission of peer-assessments for the essay 1 video-critiques is 9am on Monday 17th September. The deadline for submission of peer-assessments for the essay 2 video-critiques is 9am on Monday 29th October.

On successful completion you will be able to:

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- Be able to critically evaluate non-specialist literature that discuss chemical and biomolecular issues

Delivery and Resources

CBMS123 is an online unit (no face-to-face contact with teaching staff) delivered using [iLearn \(http://ilearn.mq.edu.au\)](http://ilearn.mq.edu.au). There you will find all the lectures, notes, assessment tasks and announcements, as well as links to interesting internet sites, software, and lots of other interesting stuff.

You must check the CBMS123 iLearn space regularly - at least once a week. For assistance with accessing iLearn, please refer to the [iLearn guide \(https://students.mq.edu.au/support/study/tools-and-resources/ilearn\)](https://students.mq.edu.au/support/study/tools-and-resources/ilearn).

You must also check your University (student) e-mail address regularly, as important information, like deadline reminders, will be emailed to you. For assistance with

accessing your e-mail, please refer to the [How to access Student Email guide \(https://wiki.mq.edu.au/display/gmail/How+to+access+Student+Email\)](https://wiki.mq.edu.au/display/gmail/How+to+access+Student+Email).

All lectures are on-line and available via the Echo360 Active Learning Platform at iLearn. For assistance with accessing the Echo360 Active Learning Platform, please refer to the [Echo 360 student guide \(https://students.mq.edu.au/support/study/tools-and-resources/ilearn/ilearn-quick-guides-for-students/lecture-recordings\)](https://students.mq.edu.au/support/study/tools-and-resources/ilearn/ilearn-quick-guides-for-students/lecture-recordings).

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](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 \(https://students.mq.edu.au/support/study/student-policy-gateway\)](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 \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](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>

dents.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:

Learning outcome

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry

Assessment tasks

- Workshop
- Essay

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

- Be able to discuss important issues that have a chemical and/or biomolecular basis from a rational perspective
- Be able to critically evaluate non-specialist literature that discuss chemical and biomolecular issues

Assessment tasks

- Workshop
- Essay
- Essay critique
- Peer assessment

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 outcomes

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry
- Understand the role of chemistry as the source and solution of issues (eg environmental) confronting society

Assessment tasks

- Workshop
- Essay

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

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry
- Understand the role of chemistry as the source and solution of issues (eg environmental) confronting society

Assessment tasks

- Workshop
- Essay

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 outcomes

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry
- Understand the role of chemistry as the source and solution of issues (eg environmental) confronting society
- Be able to discuss important issues that have a chemical and/or biomolecular basis from a rational perspective
- Be able to critically evaluate non-specialist literature that discuss chemical and biomolecular issues

Assessment tasks

- Workshop
- Essay
- Essay critique
- Peer assessment

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 outcome

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry

Assessment tasks

- Workshop
- Essay

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

- Be able to discuss important issues that have a chemical and/or biomolecular basis from a rational perspective
- Be able to critically evaluate non-specialist literature that discuss chemical and biomolecular issues

Assessment tasks

- Workshop
- Essay
- Essay critique
- Peer assessment

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

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry
- Understand the role of chemistry as the source and solution of issues (eg environmental) confronting society

Assessment tasks

- Workshop
- Essay

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

- Understand the role of chemistry and biomolecular sciences in contemporary science and medicine, as well as industry
- Understand the role of chemistry as the source and solution of issues (eg environmental) confronting society

Assessment tasks

- Workshop
- Essay

Changes from Previous Offering

Assessment tasks amended. New topics introduced.

Changes since First Published

Date	Description
15/07/2018	S2 Day and S2 External unit guides joined.