BMOL1001

Biomolecules

Session 1, Weekday attendance, North Ryde 2020

Department of Molecular Sciences

Contents

General Information	2
Learning Outcomes	3
General Assessment Information	4
Assessment Tasks	4
Delivery and Resources	5
Unit Schedule	8
Policies and Procedures	9
Changes from Previous Offering	11

General Information

Unit convenor and teaching staff
Unit Convener
Associate Professor Louise Brown
louise.brown@mq.edu.au
Contact via Email for an appointment
6WW-305
By appointment

Lecturer
Phani Rekha Potluri
phani-rekha.potluri@mq.edu.au
Contact via Email
14ER-306

Lecturer
Robert Willows
robert.willows@mq.edu.au
Contact via Email

Lecturer
Anwar Sunna
anwar.sunna@mq.edu.au
Contact via Email

Lecturer
Joanne Jamie
joanne.jamie@mq.edu.au
Contact via Email

Lecturer
Morten Andersen
morten.andersen@mq.edu.au
Contact via Email

Phani Rekha Potluri
phani-rekha.potluri@mq.edu.au

Credit points
10

Prerequisites Admission to BClinSc
Corequisites
Co-badged status
Unit description This unit is an intensive blended unit which provides students with an understanding of fundamental concepts and principles in chemistry and biochemistry in a clinical context. The unit commences with Module 1 "Biomolecules". The focus of this first module is on the structure and reactivity of the four major groups of biomolecules (lipids, proteins, nucleic acids, and carbohydrates). Discussion of each of these five groups allows for the integration of topics from the three traditional areas of general chemistry, introductory organic chemistry and biochemistry. The second module "Metabolism" draws on the concepts presented in the "Biomolecules" module and re-integrates them to fully develop the concepts of biomolecules as energy yielding compounds. Discussion in this second module is focused on metabolic considerations of carbohydrates, proteins and fats, and leads to discussion of topics such as obesity, dieting, fitness and disease. Through the participation in an integrated series of hands-on 'Molecules' workshops, students will work with biochemically active 'real-life' biomolecules of clinical importance and build a portfolio of biochemical properties of several biomolecules throughout the 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:

ULO1: Explain and relate general chemistry and organic chemistry principles applicable to the discipline of clinical science.

ULO2: Name and write (or describe) structures for representative molecules of the major classes of biochemicals/biomolecules found in the human body.

ULO3: Describe the structure and properties of biomolecules using chemical and biochemical concepts.

ULO4: Predict chemical and physical behaviours of molecules from their structures.

ULO5: Define and describe key biochemical concepts for the major biological systems involved in metabolism and energy production pathways in the living cell.

ULO6: Utilise foundational learning skills including active engagement in their learning

processes.

Assessment Tasks

Coronavirus (COVID-19) Update

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult iLearn for revised unit information.

Find out more about the Coronavirus (COVID-19) and potential impacts on staff and students

General Assessment Information

Assignment Submission

In general, this is a paperless unit so no assignments or quizzes will be physically handed in. You will be required to submit all assignments through iLearn via a Turnitin link. Turnitin is an online program that detects plagiarised pieces of work. It compares not only work between students in the current year but also across previous years, across institutions, with all published materials, and the internet. Do not under any circumstances lend your work to another student. If that student plagiarises your work you too will be liable. The penalties imposed by the University for plagiarism are serious and may include expulsion from the University. ANY evidence of plagiarism WILL be dealt with according to University policy. A full outline of the Universities policy on plagiarism is found at http://www.mq.edu.au/pol icy/docs/academic_honesty/policy.html. It is your responsibility to ensure all documents submitted or uploaded in ilearn are the correct file(s) and readable by the person marking your assignment. If files cannot be read, then late penalties will apply until re-submission of the work occurs.

Extensions and penalties

10% will be deducted for each day (up to and including any time in the 24 hr period) if an assignment is late. This includes each day of a weekend. If you are unable to submit the assignment by the due date then an extension must be sought **BEFORE** the due date unless this is absolutely impossible. Notification after the event of an "anticipatable" absence will not be looked upon favourably. To support your extension, you must submit a "Special Consideration Request" request via www.ask.mq.edu.au. See https://students.mq.edu.au/study/my-study-program/special-consideration for instructions on how to do this. Please note that evidence must be given to support your request for an extension. Applications must also be made within five working days of the assessment task due date. Decisions to approve/not approve a special consideration request are made by the university (and NOT the unit convenor).

Marks released on iLearn

It is your responsibility to check that marks released on iLearn are accurate. Note, marks released on iLearn do not have late penalties applied. Late penalties are applied AFTER marking of the submitted work. See extensions and penalties section of this document.

Attendance at workshops

There are 4 workshops in total. These are 4 offerings of the workshops in weeks 3 (lipids), 6 (proteins), 9 (sugars) and 12 (nucleic acids). You must attend the workshop you have been allocated. Attendance at all 4 workshops is **compulsory** The GAMSAT style quiz can **only** be done during the 2 hour workshop.There is a strict time limit for each quiz (15 minutes) to simulate the pace/pressure required when sitting the GAMSAT exam. The quiz will only be available during the first OR last 30 minutes of the Workshop and is worth 5% of the total grade.

If you are absent from a workshop, then a Special Consideration Request must be submitted (see above). Workshops are also a **hurdle requirement**: you must attend and participate in at least 3 of the 4 workshops to pass the unit. If your absence from a workshop is approved by special consideration then an average mark from all other workshop reports will be given. An unexplained absence from a workshop (ie your absence was not approved by special consideration) will result in ZERO marks for the missed workshop. Missing two or more workshops will result in failure of the unit.

Further details of workshop content and workshop questions are available through the iLearn site.

Final Exam

The final exam (45%) will be 3 hours in length with 10 minutes reading time. It is designed to address specific understanding of all the topics presented within the course and to show that the knowledge obtained can be applied to new problems. It will cover ALL material from the lectures and workshops.

Supplementary Exam

If you apply for a supplementary examination, you must make yourself available for the formal examination period. If you are not available at that time, there is no guarantee an additional examination time will be offered. Specific examination dates and times will be advised at a later date.

Delivery and Resources

Coronavirus (COVID-19) Update

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

BMOL1001 is a 10-credit-point, one semester unit, comprising:

- Lectures: two one-hour lectures a week.
- Workshop: four two-hour workshops (enrol into one of four sessions available). Bring your own laptop (labcoats are not required).
- Self-Study: there is an expectation that you will also engage in study of the material

outside of the formal face-to-face contact.

In order to complete (and do well) in this unit you must:

- Participate in all workshop sessions and submit workshop reports by the specified dates. To pass the unit, you must participate in at least 3 out of 4 workshops (unless special consideration is approved).
- Attempt the 4 short quizzes held at the end of each workshop.
- Submit Part A and Part B of the written assignment.
- Attempt the mid-session test (50 minutes), held during a standard lecture time.
- Sit the final examination of (3 hours), held during the examination period.

An unsatisfactory performance in the final examination or the written assignments (including workshop reports) may result in a fail grade being given, regardless of your overall aggregate score.

BMOL1001 Unit Web Site

The web page for BMOL1001 can be found at ilearn.mq.edu.au. The BMOL1001 iLearn web site is your primary source of data and information for this unit and will be used as a repository of lectures and workshop materials, and as a means of communication. Login to iLearn and follow the prompts to BMOL1001. You will be asked for a username and password. Your User Name is your Macquarie Student ID Number, which is an 8-digit number found on your Campus Card. The password is your myMQ Student Portal password. If you have any problems with iLearn log a ticket with OneHelp at onehelp.mq.edu.au. More information about OneHelp can be found at http://informatics.mq.edu.au/help/.

Announcements on ilearn are also emailed to your student email account. It is your responsibility to ensure your settings in iLearn are active to receive all announcements.

Recommended Texts

For GAMSAT preparation and chemistry background covered in this unit, the following text is recommended.

- Chemistry : The Central Science / Theodore L. Brown, H. Eugene LeMay Jr., Bruce E. Bursten, Catherine J. Murphy, Patrick M. Woodward, Stephen J. Langford, Dalius S. Sagatys, Adrian V. George. Edition: 3rd ed. Identifier: ISBN: 9781442554603 (paperback ~$125 from Booktopia https://www.booktopia.com.au/chemistry-theodore-l-brown/book/9781442554603.html) or ebook (~$65 from Pearson https://www.pearson.com.au/9781442554603).

Alternatively, most first year Chemistry text books should be suitable. It is also highly recommended that students have access to a Biochemistry text and we recommend the following text.

- Fundamentals of Biochemistry: Life at the Molecular Level, 5th Edition by Donald

Voet, Judith G. Voet, Charlotte W. Pratt, Wiley. Electronic access: eBook ($65): from http://www.wileydirect.com.au/ - case studies and exercises are on WileyPLUS.

The texts can be purchased via online bookshops such as Booktopia, Amazon or as listed above. A few copies of the prescribed text are available in the library.

Lectures: As content for this unit does not closely follow a text, it is strongly advised that you attend ALL lectures. Students who do not attend all lectures often find it difficult to pass the Unit. It is expected that students have completed HSC Chemistry (or an equivalent bridging course). Some basic knowledge for how to perform chemistry calculations is expected.

Workshops: Workshops give you an opportunity to work with your peers to put your knowledge of biomolecules learnt from the lectures into practice. One aim of the workshops is to give you an understanding of the chemical structure and the importance of the four major biomolecules in our body and their relation to how we function/live, process food and their involvement in disease. You will also review basic chemical calculations and solve problems in the workshops. Additional revision material (ie HSC chemistry level) will be provided to you via ilearn to help you prepare for the workshops.

Each workshop will begin with a short introduction and expected outcomes. You will then work through an online based workshop in small groups and perform short activities that require an individual online response. At the end (or beginning) of the workshop, a 'GAMSAT' style quiz will be done. You must attend the 2 hour workshop to participate in the quiz.

Technology Used: We expect all students to own a laptop and this must be bought to the workshop sessions. You are expected to have access to the ilearn site and be able to download PDF files on your laptop. **If you do not have your own laptop**, then please advise teaching staff on this unit **PRIOR** to the workshop sessions. A laptop will be provided to you to use during the workshop session if you have notified the staff in advance. Acrobat Reader can be used to view lecture material and can be downloaded from the Adobe at get.adobe.com/reader/.

Communication: All communication will be given via the iLearn site. Alerts for new announcements will also be sent to your student email account (unless you turn this feature off which is NOT recommended). It is your responsibility to check the ilearn site and your email account on a frequent basis. It is not uncommon for mail from iLearn to be initially recognised as spam. All unit-related correspondence must be conducted using your official university account.

E-mails sent to teaching staff from your private email accounts will be IGNORED. Additional learning resources: will be provided to support students without HSC chemistry or those struggling with general chemistry concepts. Details of these resources will be given on the ilearn site.

Additional learning resources/ Self Directed Learning & Study: You are expected to spend some time in reading a relevant textbook and other sources of information on fundamental chemistry and biochemistry, to review lecture material, and to self-assess your degree of understanding. An approximate estimate of the time commitment for a 10 credit point undergraduate unit of study such as BMOL1001 is 150 hours over 15 weeks (including the break) ~10 hours per week. This includes contact and non-contact hours. Some students

(especially students who do not have HSC chemistry) may find that they need to devote more time than this. We will provide some additional material on ilearn to help students without HSC chemistry or those requiring the review of general chemistry concepts. Details of these resources will be given on the ilearn site and can help you with your preparation for the workshops.

Unit Schedule

Coronavirus (COVID-19) Update

The unit schedule/topics and any references to on-campus delivery below may no longer be relevant due to COVID-19. Please consult iLearn for latest details, and check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

Lecture notes containing copies of material used in lectures will be available for download as pdf.

*Note: This schedule is approximate and may be altered as required. Locations/ lecturers may change. Any updates will be communicated via ilearn.

Week	Date (week starting)	Lecture 1 Thursday: 4-5pm 17 Wallys Walk - Collaborative Forum		Lecture 2 Friday: 2-3pm 14 Sir Christopher Ondaatje Ave - T2 Theatre			Tuesday 1-12pm 11 WW 140 Tut room Workshop Group A	Thursday 11-1pm 11 WW 140 Tut room Workshop Group B	Thursday 1-3pm 11 WW 140 Tut room Workshop Group C	Frid 3-5p 17 roo Wo
1	24-Feb	Intro lecture	LB	Lipids 1	RW					
2	2-Mar	Lipids 2	RW	Lipids 3	RW					
3	9-Mar	Proteins 1	LB	Proteins 2	LB		1: Lipids	1: Lipids	1: Lipids	1: L
4	16-Mar	Proteins 3	LB	Proteins (Enzymes)	AS					
5	23-Mar	Proteins (Enzymes)	AS	Sugars 1	JJ					
6	30-Mar	Mid-semester test (10%)	LB/ PP	Sugars 2	JJ		2: Proteins	2: Proteins	2: Proteins	2: P
7	6-Apr	Sugars 3	JJ	GOOD FRIDAY						
Mid-semester break: 10-26 April (Easter: 10-13 April, Anzac Day 25 April)										
8	27-Apr	Sugars 4	MA	Sugars 5	MA					
9	4-May	Nucleic Acids 1	LB	Nucleic Acids 2	LB		3: Sugars	3: Sugars	3: Sugars	3: S

10	11-May	Nucleic Acids 3	PP	Nucleic Acids 4	PP					
11	18-May	Special Lecture #1	FMHS	Cellular Energy Processes 1	RW					
12	25-May	Cellular Energy Processes 2	RW	Special Lecture #2	FMHS		4: Nucleic Acids	4: Nucleic Acids	4: Nucleic Acids	4: N
13	1-Jun	Special Lecture #3	FMHS	Revision	LB					

	Lecturers	
LB	Assoc Prof Louise Brown	
RW	Prof Robert Willows	
JJ	Assoc Prof Joanne Jamie	
AS	Assoc Prof Anwar Sunna	
MA	Dr Morten Anderson	
PP	Dr Phani Potluri	
FOMHS	Faculty of Medicine and Health Sciences	

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.)*

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 published on platform other than eStudent, (eg. iLearn, Coursera etc.) 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 or if you are a Global MBA student contact globalmba.support@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 help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

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

If you are a Global MBA student contact globalmba.support@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.

Changes from Previous Offering

Computers are no longer provided to students to use in workshops. Students are expected to bring their own laptop or arrange with teaching staff, in advance of workshops, to borrow a laptop.

Workshop material now includes some basic chemical calculations.