



Course Outline

BABS2202

Molecular Cell Biology 1

School of Biotechnology and Biochemical Sciences

Faculty of Science

Term 2, 2021

1. Course schedule and structure

Week	Lecture 1 Monday 1-2 pm PRE-RECORDED	Lecture 2 Wednesday 1-2 pm PRE-RECORDED	Lecture 3 Friday 10-11 am PRE-RECORDED	Tutorial Friday 11 am -12 pm LIVE	PRACTICAL Bioscience (E26) Lab 12 FACE-TO-FACE
Week 1 (31 May)	Introduction (NWG) LIVE	Cellular reproduction (LLM)	Regulation of the cell cycle 1 (LLM)	Regulation of the cell cycle 2 (LLM)	Introduction + Pipetting
Week 2 (7 June)	The birth of cells (LLM)	End of the cycle (LLM)	Cancer (LLM)	Revision (LLM) LIVE	Cell growth & viability 1 Setting Up Flasks + Bacteria
Week 3 (14 June)	PUBLIC HOLIDAY	Alternative cell cycles (LLM)	Prokaryotic reproduction (NWG)	Revision (LLM) LIVE	Cell growth & viability 2 Counting and Freezing
Week 4 (21 June)	Cell-cell communication (NWG)	Signalling pathways 1 (NWG)	Mid-Session Exam		Cell growth & viability 3 Counting + Yeast
Week 5 (28 June)	Signalling pathways 2 (NWG)	Signalling pathways 3 (NWG)	Signalling pathways 4 (NWG)	Revision (NWG) LIVE	Practical Review
Week 6 (5 July)	FLEXIBILITY WEEK				
Week 7 (12 July)	Immunology 1 (CK)	Immunology 2 (CK)	Immunology 3 (CK)	Revision (NWG) LIVE	ELISA
Week 8 (19 July)	Immunology 4 (CK)	Cell-cell interactions (GL)	Cell-ECM interactions (GL)	Revision (CK) LIVE	Peer Assessment
Week 9 (26 July)	Interactions between pro and eukaryotes (GL)	Cell-environment interactions (BB)	Cell-cell interactions - Biofilms (BB)	Revision (GL) (BB) LIVE	Cell Cycle AND Bacterial Cell Communication
Week 10 (2 Aug)	Practical exam				

LLM: Prof Louise Lutze-Mann
GL: Dr Gee Ling

NWG: Dr Nirmani Wijenayake
BB: A/Prof Brendan Burns

CK: A/Prof Cecile King

2. Staff

Position	Name	Email	Consultation times and locations
Course Convenors	Dr Nirmani Wijenayake	b.wijenayakeg@unsw.edu.au	By appointment
	Dr Gee Ling	g.ling@unsw.edu.au	
Lecturers	A/Prof Louise Lutze-Mann	l.lutze-mann@unsw.edu.au	
	Dr Nirmani Wijenayake	b.wijenayakeg@unsw.edu.au	
	A/Prof Cecile King	c.king@unsw.edu.au	
	Dr Gee Ling	g.ling@unsw.edu.au	
	A/Prof Brendan Burns	brendan.burns@unsw.edu.au	
Tutors	Please check Moodle	Contact your course coordinator if you need to contact one of your tutors.	During Lab times only.

3. Course information

Units of credit: 6

Pre-requisite(s): BABS1201 and CHEM1011 or CHEM1031

Teaching times and locations:

Component	Hours/Week	Day and Time	Location
Lecture	3	Monday 1 – 2 pm Wednesday 1 – 2 pm Friday 10 – 11 pm	ASYNCHRONOUS All the lectures are PRE-RECORDED and can be viewed at your convenience via Moodle.
Tutorial	1	Friday 11 am – 12 pm	SYNCHRONOUS Held LIVE on BABS2202 Microsoft Teams site.
Laboratories	3	One of these lab options Tuesday 10am – 1pm Tuesday 2pm – 5pm Wednesday 10am – 1pm Wednesday 2pm – 5pm	SYNCHRONOUS Held FACE-TO-FACE in E26 Teaching Lab 12

3.1 Course summary

Cells are not only the basic building blocks of all organisms they are also the source of the vast diversity that characterizes life on earth. This course provides an opportunity to explore the nature of cells, both the unity and the breadth of cell structure and function, from prokaryote to eukaryotes. It builds on the introduction contained in BABS1201. The major topics covered include: the cell cycle and the processes that regulate entry into, transition through and exit from the cycle; mitosis, meiosis, cyclins and cdks, apoptosis and cancer; cellular integrity and movement; interactions of cells with each other and their environment, signalling pathways, immunology, chemotaxis and sensing, biofilm formation and interactions between prokaryotic and eukaryotic cells. Practical work illustrates and extends the lectures. Online resources are designed to reinforce the lecture material and to emphasize the development of writing skills, group work and the process of scientific enquiry.

3.2 Course aims

The aims of this course are to provide students with an overview of: the diversity of cell types, how they divide, grow and form communities; the interactions of cells with each other and their environment; and the processes that regulate these interactions.

The course also aims to develop students' analytical and quantitative skills through a range of laboratory exercises and to enhance their understanding of the research methods that are employed in cell biology.

3.3 Course learning outcomes (CLO)

At the successful completion of this course you (the student) should be able to:

1. Discuss the processes that allow a cell to transit from birth to death.
2. Apply the knowledge of how cells work to real world applications.
3. Perform experimental techniques relevant to the field of cell biology.
4. Communicate scientific concepts verbally and in written form.

3.4 Relationship between course and program learning outcomes and assessments

Course Learning Outcome (CLO)	Relevant Science Graduate Attributes	Related Tasks & Assessment
Discuss the processes that occur inside a cell from birth to death.	Information literacy	Related Tasks: Lectures and tutorials Assessment: Mid-session and final exam
Apply the knowledge of how cells work to real world applications.	Research, inquiry and analytical thinking abilities Communication	Related Tasks: Lectures, tutorials, and labs, online lecture reviews Assessment: Mid-session, practical and final exams
Learn experimental techniques relevant to the field of cell biology.	Teamwork, collaborative and management skills Research, inquiry and analytical thinking abilities Ethical, social and professional understanding	Related Tasks: Labs Assessment: Practical exam
Communicate scientific concepts verbally and in written form.	Communication Research, inquiry and analytical thinking abilities Teamwork, collaborative and management skills	Related Tasks: Labs, electronic lab notebook Assessment: Practical exam and website project

4. Assessment

4.1 Assessment tasks

You must attempt and pass all the assessments in the course to pass the course.

Task / Knowledge and abilities assessed / Assessment Criteria	%	Due Date	Feedback		
			WHO	WHEN	HOW
Assessment 1: Mid-session Exam					
What is assessed: Mid-session exam covers all the lecture content of Louise's lectures. There will be a mixture of multiple choice and short answer questions that test your understanding of the content as well as factual knowledge.	15%	Week 4 Friday 10 AM – 12 PM	Course coordinators	Week 6	Moodle gradebook.
Assessment 2: Website Project					
What is assessed: Students will work as a pair to design a web page to communicate the information of a published research article to the public (20%). The assessment requires you to evaluate scientific content learned in the course, work effectively in a team, and improve your communication skills. You will also be required to peer review web pages of your colleagues individually (5%). More information will be provided to you via Moodle in Week 5.	25%	Week 8 Monday 10 AM	Demonstrators	Week 10	Peer feedback and tutor feedback.
Assessment 3: Practical Exam					
What is assessed: The practical exam covers all the lab content. You will be required to analyse data, draw graphs and answer questions.	25%	Week 10 Friday 10 AM – 12 PM	Demonstrators	Week 11	Moodle gradebook.
Assessment 4: Final Exam					
What is assessed: Final exam will cover all the lecture content other than Louise's lectures. There will be a mixture of multiple choice, short answer, and essay style questions that test your understanding of the content as well as factual knowledge.	35%	Exam Period	N/A	N/A	N/A

4.2 Details about each assessment

Practical Work (25%)

The practical program is designed to continue your training as an experimental scientist, to illuminate and extend the material presented in the lectures and to expose you to the techniques used in modern molecular cell biology.

- **Lab Book (formative)**

Requirements: As part of your assessment, you are expected to keep an electronic lab notebook, on Microsoft OneNote, in which you will record experimental details, results and to answers to discussion questions. Your electronic lab notebook should also be used to record information provided by the demonstrators in talks introducing experiments or as experiments progress, to write answers to questions asked in the practical notes and to keep a record of experiments run as demonstrations. You should ensure that you provide a clear presentation of results, with the inclusion of sample calculations where appropriate. The discussion should include an interpretation of the results, and your assessment of whether the results are reliable. If the experiment failed to yield the expected result the possible reasons for this should be discussed along with assumptions that have been made in interpreting the results etc. You can find information relevant to the discussion section in resources such as journal articles, lectures or the textbook.

Submission: This is a formative assignment and requires no submission.

Feedback: Answers to lab discussion questions and help with experimental results will be provided during lab time by your demonstrators. You will collate this information on your OneNote electronic lab notebook and keep your lab book up to date as this information will be essential to study for your practical exam.

- **Practical Exam (25%)**

Requirements: The practical exam will be a written exam that will test your understanding of experimental design, results, and outcomes. You will be assessed on your ability to interpret experimental data, form conclusions based on experimental data, and to assess the validity and accuracy of experiments and experimental set up.

Submission: Conducted in Week 10 via Moodle.

Feedback: General feedback on the exam will be provided on Moodle.

Website Project (25%)

- **The Website (20%)**

Requirements: You will work in pairs to create a website on Adobe Spark to effectively communicate the findings of a primary journal article to the public. The scientific article will be related to the lecture and lab content in the course and will be assigned to you. The website must be completed and available to view by your peers by Week 8. More details will be provided on Moodle closer to the date.

- **The peer review (5%)**

Requirements: You must individually peer review the websites of other members of the course. More details will be provided on Moodle closer to the date.

Submission: A link to the website along with a Word document of the content on the website will be submitted on Moodle. The link will be submitted to the Moodle Workshop tool while the Word document will be submitted to Turn-it-in for plagiarism checks. The Workshop tool will also be used to conduct the peer reviews.

Feedback: You will receive feedback from your peers as well as feedback from your tutors. Only the mark from the tutor will count towards your final mark for the website.

Mid-session (15%) and Final Exams (35%)

Requirements: The mid-session and final exams will examine your understanding of the lecture material covered in the course.

Submission: The mid-session exam will occur during the lecture and tutorial time on Friday in Week 4. The final exam will occur during the final exam period at the end of the Term.

Feedback: Feedback for the mid-session exam will be provided on Moodle.

4.3 Late penalties for assessments

If assessments are not submitted by the due date, a late penalty of 10% per day will be applied.

4.4 Special Consideration and supplementary exams

Missed a practical class or a tutorial	<p>Attendance in practical classes and tutorials is compulsory. If you missed one of these due to illness or other misadventure you must email your medical certificate to the course coordinator within 3 days of the absence. If you miss two or more labs you may fail the course for not satisfactorily completing the practical program for the course.</p> <p>Separate "CatchUp" labs or tutorials are not conducted but if you are able to attend an alternative lab time during the week of your absence, you may contact the course coordinator to ask for permission to do so. If you cannot attend an alternative lab, then you will need to catch up on missed work by speaking to your tutor or class colleagues.</p>
Missed an exam	<p>If you missed an exam due to illness or other misadventure, you need to apply for special consideration online. You must submit the application prior to the start of the relevant exam, except where illness or misadventure prevent you from doing so. If you become unwell on the day of the exam or fall sick during an exam, you must provide evidence dated within 24 hours of the exam, with your application. You must obtain and attach Third Party documentation before submitting the application. Failure to do so may result in the application being rejected. Further information on special consideration can be found at:</p> <p>https://student.unsw.edu.au/specialconsideration.</p> <p>FIT-TO-SIT POLICY</p> <p>If you are sick or unfit to sit the exam for any other reason, DO NOT sit the exam. UNSW has a fit to sit rule which means that if you sit an exam, you are declaring yourself fit to do so. This means you will not be allowed to apply for special consideration if you have already sat the exam.</p>
Project Extensions	<p>No extensions will be granted for the project as this assessment is available weeks in advance. If you and your partner is struggling to complete the project for some reason, you need to contact the course coordinator at least 4 days before the due date to be considered for a potential due date.</p>

HOW TO APPLY FOR SPECIAL CONSIDERATION

The application must be made through Online Services in [myUNSW](#) (My Student Profile tab > My Student Services > Online Services > Special Consideration).

Students will be contacted via *their official university email* as to the outcome of their application. It is the responsibility of all students to regularly consult their official student email accounts and myUNSW in order to ascertain whether or not they have been granted further assessment.

SUPPLEMENTARY EXAMINATION DATES

The University does not give deferred examinations. However, further assessment exams may be given to those students who were absent from the mid-session or final exams through illness or misadventure. Special Consideration applications for these tests will only be considered after the final examination period when lists of students sitting supplementary exams/tests for each course are determined at School Assessment Review Group Meetings. Students will be notified via the online special consideration system as to the outcome of their application. **It is the responsibility of all students to regularly consult their official student email accounts and myUNSW to ascertain whether they have been granted further assessment.**

Supplementary Exams Period for Term 2 - 2021:

6 September – 10 September

Further assessment exams will be offered on one of these days **ONLY** and failure to sit for the appropriate exam may result in an overall failure for the course. Further assessment will **NOT** be offered on any alternative dates.

5. Strategies and approaches to learning

5.1 Learning and teaching activities

Activities	Expectations
Lectures COMPULSORY	The lectures for the course are pre-recorded and available to you via Moodle. You should watch ALL lectures and try to take comprehensive lecture notes. DO NOT rely solely on lecture hand-outs, as it is not possible to get a good understanding of a topic just by reading the lecture slides. The lecturer who presents the lectures will set the examination questions and will also be responsible for marking the relevant examinations/tests. The students who perform the best in exams are those who watch all the lectures.
Tutorial COMPULSORY	As the lectures are pre -recorded, the tutorial is when you will get to interact with your lecturers. The tutorials will be held on each Friday on the BABS2202 Microsoft Teams site, and the attendance is expected and highly recommended. Each tutorial will be a revision session that is conducted by a specific lecturer after the end of a lecture series. These will be interactive sessions that will allow you to revise lecture content and provide an opportunity to ask questions.
Pre-lab quizzes COMPULSORY	Each practical contains a pre-lab quiz that is associated with it. You must complete this pre-lab quiz and watch any associated videos for each lab before the practical class. You will not be allowed to participate in the labs unless you complete the pre-lab quiz. Completion of pre-lab quizzes on time will be taken into consideration when allocating marks to the lab component of the course.
Practicals COMPULSORY	You must attend all the labs and actively participate in experiments and group discussion. A large component of your final marks is dependent on your performance in the practical component.
Online Revision Lessons OPTIONAL	These lessons will provide you with the opportunity to revise course content and reflect upon their own level of comprehension of the material presented in lectures. They are also designed to help enhance your writing skills and your ability to assimilate, identify, collate, and present scientific material clearly. Some of these revision tutorials require you to watch animations and answer questions. These are optional resources, but highly recommended for revision purposes as they will help you perform well in the exams. You will work on these lessons independently and the lessons will provide you with specific feedback based on your answers.

5.2 Expectations of students

- Students are expected attend all compulsory classes and be punctual. Arriving later than 5 minutes past the hour could result in being marked absent for the class. Expected attendance at compulsory classes is 100%. Less than 100% attendance without proper documentation will result in an unsatisfactory fail.
- Students must complete all compulsory online activities in the time frame provided. These include pre-lab quizzes and online lessons. Failure to complete these during the allocated time will result in an unsatisfactory fail in the course.
- Students are expected and encouraged to participate in tutorials and lab discussions. Discussions do not have right or wrong answers and should be used as an opportunity to enhance your understanding of the course content, communication skills, critical thinking, and problem-solving skills.
- All course content will be distributed through the course Moodle and Microsoft Teams site. It is the student's responsibility to check Moodle and Teams every day and read the regular announcements to ensure they are up-to-date with course developments.
- Lab components of this course will be carried out on OneNote, which will be used as an online electronic lab notebook. Students are required to keep their electronic lab notebook up to date.
- All student enquiries other than those of personal nature must be posted onto the course discussion board on Moodle. These messages will be answered within 24 hours during the working week.
- Any personal enquiries could be emailed to the course coordinators. Please ensure that you cc both course coordinators on the message. When sending an email to the course coordinators, a student must provide their name, student number and the course they are enrolled in. Personal emails may take up to 72 hours to receive a reply.
- If you are struggling to keep up with the course, please contact the course coordinators as soon as possible as they can provide guidance on how to proceed.

6. Academic integrity, referencing and plagiarism

Referencing

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

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

In BABS2202 we would prefer you to use the Harvard or APA Referencing System.

Academic integrity

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage.¹ At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Plagiarism is the presentation of the thoughts or work of another as one's own. Examples² include:

- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes 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 contributed³.

Further information about academic integrity and **plagiarism** can be located at:

- The *Current Students* site <https://student.unsw.edu.au/plagiarism>, and
- The *ELISE* training site <http://subjectguides.library.unsw.edu.au/elise/presenting>

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

¹ International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

² Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle.

³ Adapted with kind permission from the University of Melbourne.

7. Readings and resources

Text Book

This course offers a text book to assist students' learning:

Cell and Molecular Biology, 7th edition, Wiley, 2013. Karp, G.

This is available from the UNSW bookshop and the UNSW library at open reserve/ high use collection.

Moodle and Microsoft Teams

All students enrolled in courses offered at BABS automatically have access to the course Moodle site <https://moodle.telt.unsw.edu.au>. You will also be added to the course Teams site by Week 1. These sites will be used to distribute course notes and information and should be checked at regular intervals. If you do not have access to either of these sites, please contact the course coordinator straight away.

Research Resources

Literature Searching: <http://www.ncbi.nlm.nih.gov/pubmed>

UNSW Library: <http://www.library.unsw.edu.au>

8. Additional support for students

- UNSW Academic Calendar Key Dates: <https://student.unsw.edu.au/dates>
- UNSW Handbook: <http://www.handbook.unsw.edu.au/2019/index.html>
- UNSW Learning Centre: <http://www.lc.unsw.edu.au/>
- UNSW Student Equity and Disabilities Unit: <https://student.unsw.edu.au/disability>
- Counselling and Support: <https://www.counselling.unsw.edu.au/>
- University Health Service: <http://www.healthservices.unsw.edu.au/>
- The Hub: <https://student.unsw.edu.au/hub>
- UNSW Careers and Employment Service: <http://www.careers.unsw.edu.au/>
- ARC- Student Life: <https://www.arc.unsw.edu.au/>
- UNSW Student Life: <https://www.unsw.edu.au/life>