



UNSW

UNSW Course Outline

BABS2202 Molecular Cell Biology 1 - 2024

Published on the 14 May 2024

General Course Information

Course Code : BABS2202

Year : 2024

Term : Term 2

Teaching Period : T2

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Biotechnology and Biomolecular Sciences

Delivery Mode : Multimodal

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

Cells are not only the basic building blocks of all organisms, they are also the source of the vast diversity that characterises 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 bacteria 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, signaling pathways, immunology, chemotaxis and sensing, biofilm formation and interactions between prokaryotic and eukaryotic cells. Practical work during laboratory sessions illustrates and extends the lectures. Tutorials are designed to reinforce the lecture material and to emphasise the development of writing skills, group work, and the process of scientific enquiry.

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.

The course serves as a solid foundation from which to successfully undertake higher order coursework in this discipline.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Discuss the processes that occur inside a cell from birth to death.
CLO2 : Apply the knowledge of how cells work to real-world applications.
CLO3 : Perform experimental techniques relevant to the field of Cell Biology.
CLO4 : Communicate scientific concepts verbally and in written form.

Course Learning Outcomes	Assessment Item
CLO1 : Discuss the processes that occur inside a cell from birth to death.	<ul style="list-style-type: none">• Mid-Term Test• Final Theory Exam
CLO2 : Apply the knowledge of how cells work to real-world applications.	<ul style="list-style-type: none">• Practical Tests• Group Project• Final Theory Exam
CLO3 : Perform experimental techniques relevant to the field of Cell Biology.	<ul style="list-style-type: none">• Practical Tests
CLO4 : Communicate scientific concepts verbally and in written form.	<ul style="list-style-type: none">• Mid-Term Test• Group Project• Practical Tests• Final Theory Exam

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams | Echo 360

Learning and Teaching in this course

Moodle and Microsoft Teams

- All students enrolled in the course automatically have access to the course Moodle site (<https://moodle.telt.unsw.edu.au> or accessed via myUNSW).
- Students will be added to the course Teams site by week 1.
- Moodle and MS Teams will be used to distribute course information, resources, and updates. Therefore, the course site should be checked regularly.
- If you do not have access to either of these sites, please contact the course coordinator immediately.

Lecture and Tutorials

- All lectures and tutorials will be delivered live online via MS Teams. These classes will be run synchronously, i.e. students must be online while the material is delivered live.

Recording of online sessions

- Live online sessions in the course will be recorded to support teaching activities and equity and disability support services. These recordings will only be used for these purposes. All participants will have access to the recordings via Moodle.
- **By joining these online sessions, you consent to the session being recorded.** To state your objection and deny consent, you must email the course coordinator stating that you do not consent to the recording.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Mid-Term Test Assessment Format: Individual	15%	Start Date: Week 04 Due Date: Week 04 Post Date: 05/07/2024 04:00 PM
Practical Tests Assessment Format: Individual	30%	Start Date: Week 05 and Week 10 Due Date: Week 05 and Week 10
Group Project Assessment Format: Group	20%	Start Date: Week 01 Due Date: Week 09 Friday 1700 Post Date: 16/08/2024 05:00 PM
Final Theory Exam Assessment Format: Individual	35%	Start Date: During the Exam Period Due Date: During the Exam Period Post Date: 31/08/2023 05:00 PM

Assessment Details

Mid-Term Test

Assessment Overview

The mid-term test covers the content in the 'Mammalian Cells' lecture series (Weeks 1-3). There will be a mixture of multiple choice and short answer questions that test your understanding of the content as well as factual knowledge. The test duration is 1 hour and it is held in Week 4 of the term. Written feedback will be provided online in Week 6.

Course Learning Outcomes

- CLO1 : Discuss the processes that occur inside a cell from birth to death.
- CLO4 : Communicate scientific concepts verbally and in written form.

Detailed Assessment Description

A written examination consisting of both multiple choice and short answer questions. This assessment will cover material delivered in weeks 1-4.

Details of this assessment and appropriate resources will be provided in-class and available via Moodle.

This assessment will be marked by the course coordinator and the feedback will be provided through Moodle.

Assessment Length

60 mins

Submission notes

Online Off Campus Test via Inspera

Assignment submission Turnitin type

Not Applicable

Practical Tests

Assessment Overview

You will complete two practical tests that cover the lab content throughout the term. They are online tests consisting of both multiple choice and short answer questions targeting your understanding of experimental design, data analysis, graphing and calculation, data interpretation and experimental troubleshooting. Practical tests will run twice during the term, one in Week 5 and another in Week 10. Both tests run for 1 hour each and are worth 15% each. This assessment task will be marked by the course coordinator or demonstrators. Mark and feedback will be released online.

Course Learning Outcomes

- CLO2 : Apply the knowledge of how cells work to real-world applications.
- CLO3 : Perform experimental techniques relevant to the field of Cell Biology.
- CLO4 : Communicate scientific concepts verbally and in written form.

Detailed Assessment Description

A written examination consisting of both multiple choice and short answer questions. This assessment will cover all practical contents delivered throughout the term.

Details of this assessment and appropriate resources will be provided in class and available via Moodle.

The course coordinator or demonstrators will mark this assessment. The marks will be released online, and feedback will be given upon request.

Assessment Length

2 x 60 mins practical tests

Submission notes

Submission: Conducted in Week 5 AND 10 via Inspera on Moodle, each practical test will contribute to a course grade of 15%.

Assignment submission Turnitin type

Not Applicable

Group Project

Assessment Overview

You will work in a group of 3-4 to deliver a science communication piece that addresses the scientific outcomes of a published research article to the class (15% - group). The specific format could be a poster, oral presentation, or video, and will be specified at the start of term. 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 individually review science communication pieces from other groups (5% - individual). More information will be provided to you via Moodle in Week 5.

The communication piece is due in Week 8, and then you will have one week to complete your peer review (due in Week 9). Both demonstrator feedback and peer feedback will be provided by Week 10.

Course Learning Outcomes

- CLO2 : Apply the knowledge of how cells work to real-world applications.
- CLO4 : Communicate scientific concepts verbally and in written form.

Detailed Assessment Description

You will work in a group of 3-4 to deliver a science communication piece that addresses the scientific outcomes of a published research article to the class. As a group, you will produce a video to communicate the findings from a research article relevant to a topic from the course. The assessment requires you to evaluate scientific content learned in the course, work effectively in a team, and improve your communication skills. More information will be provided to you via a live tutorial in Week 1. Details of this assessment will be provided to you via a live tutorial in Week 1. Appropriate resources will be provided in class and available via Moodle.

The video is due in Week 9. Feedback will be provided by end of Week 10.

Assessment Length

10 mins recorded presentation

Submission notes

Submission: A recording will be submitted to YouTube and the URL to be provided via Moodle.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Hurdle rules

A midway checkpoint is submitted in Week 05 (3%). More information will be provided in the Week 1 tutorial session.

Final Theory Exam

Assessment Overview

The final theory exam will cover all the lecture content other than the 'Mammalian Cells' lecture series which was assessed in the Mid-Term Test. 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.

This assessment is in the Final Exam Period and is 2 hours in duration.

Feedback is available through inquiry with the convenor.

Course Learning Outcomes

- CLO1 : Discuss the processes that occur inside a cell from birth to death.
- CLO2 : Apply the knowledge of how cells work to real-world applications.
- CLO4 : Communicate scientific concepts verbally and in written form.

Detailed Assessment Description

A written examination will cover all the lecture content other than what was assessed in the mid-term exam. This will consist of multiple choice, short answer and essay-style questions.

Details of this assessment and appropriate resources will be provided in class and available via Moodle.

Mark/grade will be released to students on official assessment results release date. Individual feedback will be provided upon request.

Assessment Length

90 mins - 120 mins

Submission notes

Online Off Campus Exam on Inspera

Assignment submission Turnitin type

Not Applicable

General Assessment Information

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.

STATEMENT ON THE PERMITTED USE OF AI: Simple editing assistance only

- In this course, you may use AI-based software to research and prepare prior to completing your assessments.
- You **are** permitted to use standard editing and referencing functions in word processing software.
 - This is limited to spelling and grammar checking (e.g. Word) and reference citation generation (e.g. EndNote) in the creation of your submission.
 - You must **not** use any functions that generate or paraphrase or translate passages of text, whether based on your own work or not.
- Please note that your submission will be passed through an AI-generated text detection tool.
 - If your marker has concerns that your answer contains passages of AI-generated text you may be asked to explain your work.
 - If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.

Grading Basis

Standard

Requirements to pass course

Activities (Expectations)

Lectures (COMPULSORY)

The course lectures will be delivered LIVE and available to you via Moodle. You should attend 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 (HIGHLY RECOMMENDED AND IN SOME WEEKS COMPULSORY)

The tutorial is where you will get to interact with your lecturers in the form of Q&A. The tutorials will be held each Friday from 1300-1400 on the BABS2202 Microsoft Teams site, and 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 interactive sessions will allow you to revise lecture content and allow you to ask questions. In some weeks, exams and quizzes will also be conducted during the lecture or tutorial time, and you must be available to complete these during this time.

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 discussions. 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.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Lec 00 Introduction to BABS2202 SB + GCL Lec 01 Cellular reproduction SB Lec 02 Regulation of the cell cycle 1 SB
	Laboratory	Introduction, Lab Safety and Pipetting (Spectrophotometry)
	Tutorial	Intro to Group Project
Week 2 : 3 June - 9 June	Lecture	Lec 03 Regulation of the cell cycle 2 SB Lec 04 The birth of cells LLM Lec 05 End of the cycle LLM
	Laboratory	Cell growth and viability series 1
	Tutorial	Revision 01 SB
Week 3 : 10 June - 16 June	Lecture	Lec 06 Cancer LLM Lec 07 Alternative cell cycles LLM
	Laboratory	Cell growth and viability series 2
	Tutorial	Revision 02 LLM
Week 4 : 17 June - 23 June	Lecture	Lec 08 Bacterial reproduction NWG Lec 09 Introduction to cell signalling NWG Lec 10 Midterm Exam
	Laboratory	Cell growth and viability series 3
	Tutorial	Midterm Test
	Assessment	Midterm Test
Week 5 : 24 June - 30 June	Lecture	Lec 11 Receptor protein tyrosine kinase NWG Practical Test 1
	Laboratory	Cell growth and viability series 4 AND Practical Review
	Tutorial	Revision 03 NWG
	Assessment	Practical Test 1
Week 6 : 1 July - 7 July	Other	FLEXIBILITY WEEK
Week 7 : 8 July - 14 July	Lecture	Lec 12 Ion channel coupled and steroid hormone receptors NWG Lec 13 Convergence, divergence and cross talk NWG Lec 14 Introduction to Immunology CK
	Laboratory	Application: Effect of Drugs 1
	Tutorial	Revision 04 NWG
Week 8 : 15 July - 21 July	Lecture	Lec 15 Innate and adaptive immunity CK Lec 16 Immunity-vaccination CK Lec 17 Immunotherapy CK
	Laboratory	Application Series: Effect of Drugs 2 Application Series: ELISA
	Tutorial	Revision 05 CK
Week 9 : 22 July - 28 July	Lecture	Lec 18 Cell-cell interactions GCL Lec 19 Cell-ECM interactions GCL Lec 20 Interactions between bacteria and eukaryotes GCL
	Laboratory	Application Series: Cell Cycle AND Bacteria cell-cell communications
	Tutorial	Revision 06 GCL
	Assessment	Group Project submission
Week 10 : 29 July - 4 August	Lecture	Lec 21 Cell-environment interactions BB Lec 22 Cell-cell interactions - Biofilm BB Lec 23 Revision 07 BB + Course wrap up GCL + SB
	Laboratory	Practical overview and revision
	Tutorial	Practical test 2
	Assessment	Practical Test 2

Attendance Requirements

- Students are expected to attend all compulsory classes and be punctual. Arriving later than 5 minutes past the hour could result in being marked absent from 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. They 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. The student must check Moodle and Teams daily and read the regular announcements to ensure they are up-to-date with course developments.
- The lab components of this course will be carried out on OneNote, an online electronic lab notebook. Students are required to keep their electronic lab notebook up to date.
- All student enquiries about the course should be emailed to the course convenors. Please include both course coordinators in the message. When emailing the course coordinators, please use your official UNSW student email account, and provide your name, student number, and the course they are enrolled in. These emails will be answered within 48 business hours.
- If you struggle to keep up with the course, please get in touch with the course coordinators as soon as possible. They can provide guidance on how to proceed.

General Schedule Information

The lectures and tutorials will be delivered ONLINE via MS Teams

The practical classes will be IN PERSON in Biosciences Teaching Laboratories

Course Resources

Prescribed Resources

Text Book

This course offers textbooks to assist students' learning:

1. [Karps Cell and Molecular Biology](#), 9th edition, Wiley, 2019. Karp, G.
2. [Molecular Cell Biology](#), 9th edition, Freeman WH Freeman, 2021, Lodish, H

These are available from the UNSW bookshop and the UNSW library in the open reserve/high-use

collection.

Course Outline

- The Course Outline will be available to students via Moodle.

Literature searching

- PubMed can be used to search for and access peer-reviewed scientific literature and should be used in preference to Google Scholar: <http://www.ncbi.nlm.nih.gov/pubmed>
- For full access to the journal articles, please use the UNSW Library VPN (<https://www.myit.unsw.edu.au/services/students/remote-access-vpn>).

UNSW Library

- <http://www.library.unsw.edu.au>

Recommended Resources

Research Resources

- Literature Searching: <http://www.ncbi.nlm.nih.gov/pubmed>
- UNSW Library: <http://www.library.unsw.edu.au>

Additional Support for students

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

Course Evaluation and Development

Course evaluation can occur in the following ways:

- 1) Student Ambassador Program - a collaboration with students from the cohort gathering feedback on a fortnightly basis during the term, feedback will be discussed and implemented throughout the term.
- 2) Demonstrator feedback - an evaluation survey on students' learning experience in the

laboratory, feedback will be collected in Week 04 and Week 09, implementation strategy will be carried out in the second half off the term.

3) myExperience feedback - end-of-term evaluation survey on the efficiency of the course delivery and learning experience, feedback will be gathered and course improvement to be implemented for future iterations.

A comprehensive list of changes to the course which have resulted from student feedback is outlined on Moodle.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Gee Chong Ling		Rm 220C, Biological Sciences Building D26	+612 9065 6206	Mon to Fri 0900 to 1700	Yes	No
Lecturer	Nirmani Wijenaya ke Gamachchige		Rm 220A, Biological Sciences Building D26	+612 9065 1163	By appointment only	No	No
	Louise Lutze-Mann		n/a	n/a	By appointment only	No	No
	Cecile King		n/a	n/a	By appointment only	No	No
	Brendan Burns		n/a	n/a	By appointment only	No	No
Convenor	Sarah Bajan		Rm 220E, Biological Sciences Building D26		Mon to Fri 0900 to 1700	Yes	Yes

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.

- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

Academic Honesty and Plagiarism

Referencing is a way of acknowledging the sources of information that you use to research 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 can constitute plagiarism.

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

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. 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.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

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

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)