

## **Ngā whakamārama** **Course Information - 2024**

### **Biol 463 - Cell Biology**

#### **Whakamahuki / Description**

A critical examination of recent advances in selected areas of cell biology with emphasis on the cytoskeleton, cell junctions cell growth, motor proteins and autophagy. The focus ranges from fundamental cellular and molecular biology to consideration of cellular mechanisms within the context of physiological or pathological processes.

During the course our aim is to encourage and provide advice and feedback to enable you to develop skills in written and oral communication, and in the efficient acquisition of scientific information. The course will involve group discussion, presentation of scientific papers, and preparation and critique of a review article.

#### **Āhuratanga Taura / Graduate Profile**

This course will provide students with an opportunity to develop these UC Graduate Attributes ([www.canterbury.ac.nz/study/graduate-profile/students/what-are-the-graduate-attributes/](http://www.canterbury.ac.nz/study/graduate-profile/students/what-are-the-graduate-attributes/)):

- GP1 Critically competent in a core academic discipline.
- GP2 Employable, innovative and enterprising.
- GP3 Biculturally competent and confident: K3 Traditional and contemporary realities of Māori society; K5 Process of colonisation and globalisation.

#### **Hua ako / Course learning outcomes and Aromatawai / Associated assessment**

**At the end of the course, students are expected to be able to:**

Gain a greater appreciation and understanding of the internal workings of the cell (*assessment task: seminars, literature review and final exam*). GP1

Achieve familiarity with some modern laboratory methods used in cell biology, and an understanding of the diversity of experimental approaches that can be taken to investigate cells (*assessment task: seminars, literature review and final exam*). GP1, GP2

Comprehend the unity of eukaryotic life - understand that the cell biology of organisms as diverse as plants, fungi and lower animals will help investigations of human biology and disease (*assessment task: seminars, literature review and final exam*). GP1

Understand that to build multicellular organisms requires interactions between cells, and the differentiation and specialisation of cells (*assessment task: seminars, literature review and final exam*). GP1

Appreciate how research in cell biology leads to a better understanding of disease and an understanding of the factors that are pertinent with respect to Māori health and the impact of colonisation. GP1, GP3 (K3,K5)

#### **Pūkenga ngaio / Transferable skills**

**The following skills are developed in this course:**

Synthesise information. In everyday life and in many job situations you will be required to read information from different sources, generate your own understanding and develop your own viewpoint. *In the seminars we will discuss recent research papers and this will develop your abilities to identify the essential elements of research outputs - you will use these skills in report writing.* GP2

Analyse information. Important for research, as well as in a number of private-sector organizations. *This skill will be further developed when we assist you to analyse the data we generate in the lab.* GP2

Write a literature review. Clear written communication is essential for most professional careers. *We will provide you with written guidelines on the elements of successful reports, including how best to present data, and we will help you recognise these elements by supplying examples. GP2*  
*Give a verbal presentation. In many jobs there is a requirement to give presentations to groups of people and to answer questions relating to your presentation. You will have to opportunity to practice these skills during the seminars. GP2*

### **Pūkenga / Teaching staff**

Assoc. Prof. Ashley Garrill	room 420, Biological Sciences email: ashley.garrill@canterbury.ac.nz
Dr Christoph Goebel	room 422, Biological Sciences email: christoph.goebel@canterbury.ac.nz

### **Wātaka / Timetable**

The provisional schedule of seminars are as follows:

Seminar 1:	Ashley - cytoskeleton
Seminar 2:	Ashley – cell junctions
Seminar 3:	Ashley – cell growth
Seminar 4:	Ashley – gut epithelia
Seminar 5:	Ashley - autophagy
Seminar 6:	Christoph – cell death

### **Reading**

BIOL 432 extends the coverage of a number of topics introduced in BIOL 351, as well as introducing topics that were not covered in that course. Your BIOL 351 lecture notes and/or sections of *Molecular Biology of the Cell* by Alberts *et al* will often be given as background reading. The 6th edition of this very impressive textbook has just been released, but references will also be given to the 5th edition. The 4th and 5th editions of Alberts are also in the Restricted Loan section of the Central Library, and a non-formatted version of the 4<sup>th</sup> edition of Alberts *et al*. is accessible electronically at the following website: [www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=mboc4.TOC&depth=10](http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=mboc4.TOC&depth=10).

In addition, you will be assigned various papers (both original articles and reviews) to read. Links to these papers will be placed in the course folder in Learn.

### **Aromatawai / Assessment**

#### **Summary**

Review article	25%
Class presentations/discussions	15%
Final exam	60%

**Review article:** (25% in total; 20% on writing and 5% on reviewing)

This is an exercise to get you used to writing a research review. You will write a review that will be peer reviewed by one of the lecturers and two of your peers from the class. This initial version of your review should **not** be thought of as a draft! You will then revise the review, taking into account the comments of the peer reviewers. Both versions of the review will be marked and graded.

Your review must be written on a topic in cell biology of your choice, but subject to the approval of the course co-ordinator (and not in the area of your project/thesis research, or on a topic covered in the seminars). Your review should be similar to the reviews that are published in the "Trends in" Journals (for example *Trends in Biochemical Sciences* or *Trends in Cell Biology*). In other words, it must go beyond the textbook level. It is necessary to incorporate information from primary source material and not just from reviews. In order to obtain sufficient coverage of the topic you will probably need to use at least 20-30 references. As in the Trends reviews, you should give some indication of the experimental evidence that has given rise to current thinking on the topic.

As detailed below in the Deadlines, you should initially prepare a proposal that incorporates the title of your review and a brief overview (no more than a paragraph). You should include in this proposal a few key papers that will be cited in your review.

Format:

Use headings and subheadings where appropriate to organise your review article.

For the references follow the format used in Annual Review of Cell & Developmental Biology (held in the Central Library) for literature citations. This means that the author(s) and year of publication are to be cited throughout the text and in figure legends indicating the source of information. The full reference (including title) for each citation is then given in a list of literature cited at the end of your essay. **Details of the required format should be obtained by looking at the 2014 Annual Review of Cell & Developmental Biology. Note the use of italics, method of punctuation etc. and copy this exactly.**

If appropriate, use diagrams to illustrate your text.

Your review article must be a maximum of **3000 words** of text, not including references or Figure Legends, and should be **double-spaced**, and no smaller than **12 pt** type. Please **number the pages** of your review.

You should submit your review electronically. If this is a problem see Ashley

Dates for each of the steps below will be given in the first course meeting.

Proposal: This is to ensure that your topic is in a suitable area and that you will be able to find sufficient references to cover/cite. Submitted by email to Ashley and discussed and approved with/by him. This will not be marked.

The proposal should comprise a title a brief (one paragraph) synopsis of what you'll cover and several key references.

Review submission: This version of your review will be worth 10% of the course mark. You should submit this review via Turnitin on Learn.

Return of critiqued articles: **You will receive two peer reviews of your article.**

Review resubmission: The resubmission of the revised review, plus response to reviewers comments if appropriate. Please submit these documents via Learn.

**Peer review of review articles: 5%**

You will act as a peer reviewer for two of your class mates reviews from the review submission item listed above. You will write 1-2 sides of A4 that critically evaluates the review stating whether you regard is as suitable for publication. More details will be given with respect to this exercise in the introductory meeting in February.

**Seminars: 15%**

Presentation and/or participation in the sessions. The nature of this assessment will differ depending on how the session is structured. For example, you may be asked to present a research paper/topic to the rest of the class. Alternately you may be required to participate in class discussion. Assessment will be based on criteria that will be placed on Learn at least one week prior to the session date.

Attendance: You are required to attend all six seminars. For this reason, if you are unable to attend a seminar you should discuss this with the relevant lecturer in advance. If you are ill, you should email or

call the relevant lecturer **before** the seminar starts and provide a medical certificate to explain your absence within 7 days.

**Participation:** Seminars are not simply about your paper if you are presenting a paper. You should be fully prepared by having read all the papers being covered in the seminar, and you are expected to contribute to the seminar by asking questions and being involved in discussion.

**Final examination:** 60%

To be scheduled at a time TBA. The exam will comprise questions from each section of the course. It is vital that you participate actively in discussion in the seminars so that you are well versed in each topic.

## **RULES, REGULATIONS, AND WHAT TO DO WHEN THINGS GO WRONG**

[updated March 2023]

**If in doubt:** ASK! The course coordinator is happy to answer questions. All staff involved in the course are available for advice on specific issues.

### **What do I do if I have to miss a test/exam or if my performance was impaired?**

In Biological Sciences, we require a satisfactory level of achievement in both the theoretical aspects of the discipline and in practical activities. **This means you must attend all class activities (labs, tutorials, fieldtrips)** and submit all items of assessment unless you have a very good reason not to (e.g. medical reasons) and if this has been approved by your course coordinator.

If you feel that **illness, injury, bereavement or other extenuating circumstances beyond your control** prevented you from completing a **test/exam** worth 10% or more of the total course assessment, or if these circumstances affected your performance in such assessments, you should apply for Special Consideration. Applications for Special Consideration should be submitted via the Special Consideration website <http://www.canterbury.ac.nz/study/special-consideration/> *within five working days* of the assessment or its due date. You should also notify the course coordinator. If you apply for Special Consideration because of medical reasons, you should visit a doctor within a reasonable timeframe (application form available on the website above or from the Student Health Centre).

The Special Consideration provisions are intended to assist students who have covered the work of a course but have been prevented by illness or other critical circumstances from demonstrating their mastery of the material or skills at the time of a text/exam – **they do not excuse you from doing the test/exam** within a reasonable time agreed with the course coordinator.

### **What do I do if I have to miss a quiz or assignment or if I need an extension?**

You cannot apply for Special Consideration if you miss an assessment that is not a test/exam, such as a quiz, lab report, essay, literature review or other assignment, or if the test/exam is worth less than 10% or more of the total course assessment. If this happens or if you need an extension because of **illness, injury, bereavement or other extenuating circumstances beyond your control**, please contact the course coordinator and arrange an alternate activity and/or submission date. You should also do this if you have to miss a laboratory, tutorial or field trip.

### **What are other valid reasons to miss an assessment or mandatory course activity?**

The Special Considerations policy (<https://www.canterbury.ac.nz/about/governance/ucpolicy/student/special-consideration-procedures-and-guidelines/>) outlines only a few kinds of activities that UC considers valid reasons for missing an assessment or mandatory course activity other than those outlined above. These include **involvement in international or national representative sport or cultural groups**. Holiday trips, birthday parties, weddings, work-related commitments etc. are not given special status in this University policy. Please contact your course coordinator to ask for an alternate activity and/or submission date if you are eligible.

### **Special Consideration for late discontinuation of a course**

Students prevented by **extenuating circumstances** from completing the course after the final date for withdrawing, may apply for Special Consideration for late discontinuation of the course. Applications must be submitted via <http://www.canterbury.ac.nz/study/special-consideration/> no later than five working days after the examination period has finished.

### **Academic Integrity**

It is the responsibility of each student to be familiar with the definitions, policies and procedures concerning academic misconduct/dishonest behaviour. Instances of academic misconduct will be dealt with in a serious and appropriate manner. Students should refer to: <https://www.canterbury.ac.nz/about/ako/academic-quality/academic-integrity/>

### **Plagiarism**

It is essential that you are aware that plagiarism is considered a very serious offence by the academic community, the University and the School of Biological Sciences. Plagiarism is defined as taking content from another work or author and presenting it,

without attribution, as if it is your own work. Content here includes text (sentences or major parts of sentences), display items (graphs and tables), and overall structure (the detailed sequence of ideas). Plagiarism includes:

- re-use of previous assignments (even if each individual sentence has been rephrased to say the same thing in different words, if the overall structure is re-used).
- copying of another student's work (with or without their consent).
- the unreferenced use of published material or material from the internet, e.g. cutting and pasting of paragraphs or pages into an essay.
- the generation of text using artificial intelligence technology without disclosure and when it is not intended to be part of an assignment.

For most pieces of in-term assessment you will be given information concerning the use of direct and indirect quotes from previously published work. If you have any doubt about the appropriate use of published material, please speak with an academic staff member. If you are unsure what plagiarism is, seek advice.

It is a School policy that courses will likely that you submit work electronically for subsequent analysis of originality using *Turnitin*. Students agree that by taking courses in BIOL, assessments may be submitted to Turnitin.com for textual similarity review. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use as posted on the Turnitin.com site.

### **Where do I hand in assignments and then collect them once marked?**

All assignments should be submitted as directed by the course coordinator. Typically, this will be electronically via Learn for on-line grading and for analysis in *Turnitin*. If a hard copy is requested, assignments should be placed in the designated collection boxes in the foyer of the 2nd floor of the School of Biological Sciences (Julius von Haast building, at the top of the stairs). All assignments must be accompanied by a cover sheet signed by you stating that the submitted work is not plagiarised. Cover sheets are available on top of the collection boxes, or you can download one from the Biology website (<http://www.canterbury.ac.nz/media/documents/science-documents/assignment-coversheet.pdf>).

Marked assignments will be returned through Learn or, if in hard copy, can be collected from the School of Biological Sciences reception, unless directed otherwise by the course coordinator. Teaching staff will endeavour to return work as soon as possible, and should contact you if there are likely to be any delays that will prevent return within the maximum 4-week timeframe.

### **What if I can't get it finished in time?**

Reports and assignments should be handed in on time. Extensions may be granted if you have a valid reason (see above). **If you require an extension, you should request one from the course coordinator** (or the lecturer responsible for marking the work), with as much notice as possible. Please do this BEFORE the deadline for the assignment. **If you have been given an extension and you have been asked to submit a hard-copy of your work, you should hand the work DIRECTLY to the course coordinator** (do not put it in the drop box as it may not be cleared after the due date).

If an extension has not been granted:

- work handed in within 1 hour of the deadline: penalty of up to 5 percentage points of the mark for the assignment (e.g., a mark of 75% might be reduced to 70%).
- work handed in 1 – 24 hours after the deadline: penalty of 10 percentage points of the mark for the assignment (e.g., a mark of 75% is reduced to 65%).
- work handed in 1 – 7 days after the deadline: penalty of 15 percentage points of the mark for the assignment (e.g., a mark of 75% is reduced to 60%).
- work handed in more than 7 days after the deadline will not be marked or earn credit.

### **What if I have written more than the word or page limit?**

If there is a word limit on an assignment, it is usually there to stop you doing too much work and to encourage you to write succinctly. You can be up to 10% over without too much worry, but if the length increases beyond that your mark may suffer due to failure to follow the requirements. If you find yourself way over the word limit talk to the lecturer concerned about how to get your assignment to an acceptable length. Unless specifically advised that there is flexibility, you must adhere to the word limit indicated.

### **What if I fail part of the course?**

In Biological Sciences, we require a satisfactory level of achievement in both the theoretical aspects of the discipline and in practical activities. This means you must attend all class activities and submit all items of assessment unless you have a very good reason not to (e.g. medical reasons). **A student must attain an average score of at least 40% for in-course assessments (e.g. assignments, reports, quizzes) and an average score of at least 40% in the exam and/or tests, AND score at least 50% overall for the course, to be awarded a passing grade. See the course outlines for clarification of the assessment items included in each category and ask the coordinator if you are still unsure.**

### **What's the best way to give feedback?**

We welcome constructive feedback at all times – help us to make this a valuable course for you. We endeavour to remain approachable at all times. If you would rather give feedback anonymously, please use the online course survey or talk to lab demonstrators, or your class rep (who will all report back to the staff-student liaison committee that includes a representative from each of the undergraduate classes). Class representatives will be selected from each class at the start of course.

### **What's the best way to complain?**

If you feel you have not been fairly treated during this course, please raise the issue with the lecturer or course coordinator in the first instance. Other avenues include your class rep., who can raise issues anonymously, or the UCSA education coordinator.

### **Grading**

A+	90% or above
A	85 – 90
A-	80 – 84
B+	75 – 79
B	70 – 74
B-	65 – 69
C+	60 – 64
C	55 – 59
C-	50 – 54

A restricted pass (R) **may** be awarded to those who are close to a pass (i.e. an overall score of 48-49.9%) AND who have achieved at least a 40% overall score in both in-course assessment and tests/exams. If an R grade is awarded you gain credit for the course but **cannot continue into papers that require this course as a pre-requisite**. NB. The R grade is only available at 100 and 200 level - it cannot be awarded for third year papers.

Failing grades: D 40-49      E 0-39