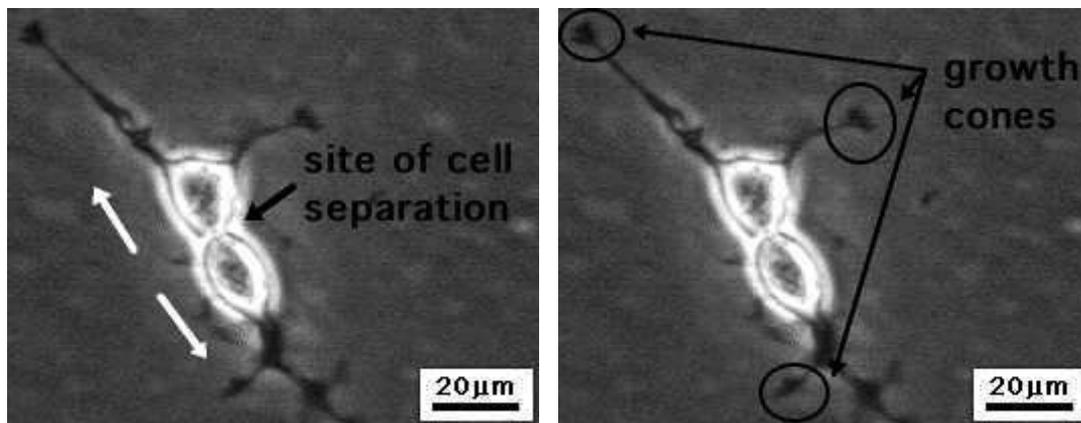


## ANAT3231 Course Overview – Semester 1, 2014



Phase contrast image of two cells (neural cell line) that have recently divided.



### Dr Mark Hill

Course Coordinator  
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## Introduction to the Course

**Welcome** to Cell Biology in 2014 and thank you for choosing this course! Cell Biology is at the core of basic scientific investigations and current medical research. This handout contains information designed to help you get started and plan for this semester, please take the time to read through it and contact me if you have any difficulties. I am also continually assessing student feedback in the updating, design and presentation of the course. Also feel free to contact me with questions and course feedback by email at any time. Students who have completed this course have enjoyed both the pace, content and structure of the course.

The course this year will benefit from the new researchers in Cell Biology within the School. Dr Thomas Fath will be providing a number of the lectures and supervise a laboratory. Professor Peter Gunning, Professor Edna Hardeman, Dr Galina Shevzov and Dr Steve Palmer will also be contributing to the course. Skills and knowledge from this current course will be a great advantage in your own future career. Take the opportunity to discuss potential future Honours projects with these researchers.

In **Lectures and Labs** I clearly identify any examinable material. A key component of course structure is the revision final lecture, an opportunity to review course material and ask questions about difficult concepts. As part of the course I also encourage you to develop the general scientific skills of critical thinking, analysis and scientific writing. These are important life skills applicable and required for any future (scientific) career.

**Dr Mark Hill**

(Updated February 2014)



### Cell Biology Wiki

The course is supported online by a Wiki resource that allows student access to lecture and practical class materials, as well as the location for Group project work throughout the semester.

<http://php.med.unsw.edu.au/cellbiology>

### Moodle

UNSW Australia during 2014 has begin using Moodle for course learning management. I will be adding course content throughout the semester, additional course resources, student discussion, and will also use for student contact.

<https://student.unsw.edu.au/moodle>



## Table of Contents

<b>Introduction to the Course .....</b>	<b>2</b>
<b>Course Coordinator.....</b>	<b>4</b>
<b>Student Contact.....</b>	<b>4</b>
<b>School of Medical Sciences Student Advisor .....</b>	<b>4</b>
<b>Course Information .....</b>	<b>4</b>
<b>Course Structure .....</b>	<b>4</b>
<b>Course Aims .....</b>	<b>4</b>
<b>Course Assessment.....</b>	<b>5</b>
<b>Assessment Design .....</b>	<b>5</b>
<b>Learning Outcomes.....</b>	<b>5</b>
<b>Examiner .....</b>	<b>5</b>
<b>Grievance Procedure .....</b>	<b>6</b>
<b>Special Consideration.....</b>	<b>6</b>
<b>Medical Certificates.....</b>	<b>6</b>
<b>UNSW Student Social Media Guidelines .....</b>	<b>7</b>
<b>Student Support Services.....</b>	<b>7</b>
<b>Withdrawal from Courses .....</b>	<b>7</b>
<b>Results.....</b>	<b>7</b>
<b>Health and Safety .....</b>	<b>7</b>
<b>Academic Honesty and Plagiarism.....</b>	<b>8</b>
<b>Course Schedule Cell Biology .....</b>	<b>9</b>
<b>Public Holidays.....</b>	<b>9</b>
<b>Textbook References – Essential Cell Biology (3<sup>rd</sup> edn.) .....</b>	<b>10</b>
<b>Health and Safety – Risk Assessment .....</b>	<b>11</b>

## **Course Coordinator**

Dr Mark Hill

Room 532, level 5, Wallace Wurth East

E: [m.hill@unsw.edu.au](mailto:m.hill@unsw.edu.au)

## **Student Contact**

Consultation times: Tuesday 1-2 pm; Thursday 10-11 am; or by email appointment.

Please contact me prior to consultation by email with brief description of issue.

UNSW Policy:

”When a student is enrolled into University of New South Wales, he or she will be automatically issued with a University email account. The School will use that email account as the official electronic channel to communicate with each student.”

## **School of Medical Sciences Student Advisor**

Carmen Robinson, School of Medical Sciences, BSB Student Office

Room G27, Biosciences Building

E: [Carmen.Robinson@unsw.edu.au](mailto:Carmen.Robinson@unsw.edu.au) P: +61 (2) 9385 2464 F: +61 (2) 9385 2202

BSB Office opening hours are: Monday, Wednesday, Thursday & Friday 9am - 12.30pm, 1.30pm - 4.30pm, Tuesday 9.45am - 4.30pm

## **Course Information**

6 units of credit, Science/Anatomy program.

Prerequisite ANAT2200 or ANAT2241.

## **Course Structure**

Course commences week 2 semester 1 2014.

Two lectures and a single 2 hour tutorial/laboratory per week.

Lecture 1 – Tuesday 12-1 pm Wallace Wurth LG02

Lecture 2 – Thursday 9-10 am Wallace Wurth LG02

Practical – Thursday 3-5 pm Wallace Wurth East G08

## **Course Aims**

- To present the current theories and applications of cell biology.
- To describe internal and external cellular structures.
- To examine dynamic changes within the cell.
- To cover emerging cell biology research technologies.

## Course Assessment

There will be three parts to the course assessment:

1. Independent Learning – Assessment throughout semester. **20%**
2. Group Project – An online project. **20%**
3. Theory – A written test (2 hour) held during the examination period. **60%**

## Assessment Design

The course has been structured and designed around the 16 guidelines on learning (<http://teaching.unsw.edu.au/guidelines>) developed as part of UNSW guideline vision, values and strategies to improve the educational experience of students.

The course specifically builds upon the following graduate capabilities (<http://teaching.unsw.edu.au/graduate-capabilities>)

- understanding of their discipline in its interdisciplinary context
- capable of independent and collaborative enquiry
- rigorous in their analysis, critique and reflection
- able to apply their knowledge and skills to solving problems
- capable of effective communication
- information and digitally literate
- capable of initiating as well as embracing change
- collaborative and effective team workers
- capable of independent, self-directed practice
- capable of lifelong learning

## Learning Outcomes

By the end of this course you will have learned the current understanding of both cell structure and function and how this is dynamically organized. You will also understand the major methods used to study cells and their application to medical research. This information can then be integrated with other program subjects to give a cellular basis for Anatomy. Importantly the teaching methods and content are designed to encourage your own self-motivated scientific enquiry.

## Examiner

The course organizer (Dr Mark Hill) will be the examiner. The course assessor is Prof Edna Hardeman.

- **Theory examination** will be an exam within the session 1 exam period and will conform to University examination guidelines. Students absent through illness or misadventure should immediately contact UNSW Student Central.
  - <https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>
- **Supplementary examinations** will only be offered if the student is unable to attend the final examination for medical or misadventure reasons. Special

considerations sought outside the 3 day time period WILL NOT be accepted except in TRULY exceptional circumstances.

- **Individual Assessment** (independent learning) brief questions based upon lecture and laboratory content given in the laboratory time and submitted online by the end of laboratory or an agreed submission time throughout semester.
- **Group Project** an online project prepared by small groups of students throughout semester. The project will have an assessment by student peers and final assessment by the course organizer at the end of semester.

<https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinations.html>

### **Grievance Procedure**

Course problems or a grievance with the course, please first attempt to resolve with the course organizer (Dr Mark Hill) then the head of teaching (Prof. Ken Ashwell). If the grievance cannot be resolved in this way, please then contact to the school's grievance officer (Dr Priti Pandey).

<https://student.unsw.edu.au/complaints>

### **Special Consideration**

Students applying for Special Consideration for an illness or misadventure that may have affected their ability to prepare or complete an assessment are required to follow the procedures outlined by the University in myUNSW and available at the following site:

<https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>

Students should particularly note the additional requirements beyond a standard medical certificate to include an assessment of the severity of your illness or misadventure and opinion of the likely effect on your capacity to undertake the assessment task/s concerned. The timeline for submission, i.e. within 3 days of the assessment, is also critical. A summary of each request for Special Consideration should also be forwarded to the Program Authority.

### **Medical Certificates**

Students who miss scheduled activities due to illness or other reasons must submit a copy of a medical certificate or other acceptable documentation to the Course Coordinator. Certificates should be lodged no more than 3 days after the activity. Certificates received later than this will not be considered valid and will not be accepted. The following details must be included: Name, student number, date and name of activity missed.

All medical certificates must be fully legible.

## **UNSW Student Social Media Guidelines**

Please also read and follow the UNSW student social media guidelines.

<https://student.unsw.edu.au/social-media-guidelines>

## **Student Support Services**

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the Program Authority or Course Convenor, prior to or at commencement of the course, or with the Equity Officer in the SEADU (9385 4734). Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional examination and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

<http://www.studentequity.unsw.edu.au>

## **Withdrawal from Courses**

The last date to discontinue a course without academic or financial penalty is the census date in each semester.

You may still discontinue courses after the census date and until the Withdrawal without Failure date without academic penalty. However, you are still liable for fees for the course. If your request for withdrawal from one or more courses is the result of exceptional circumstances you may be eligible to apply for reimbursement of charges for the course. In addition, if exceptional circumstances prevent you from completing a course, and the Withdrawal without Failure date has passed then you may choose to apply for late withdrawal from a course. In both cases you must demonstrate that you were prevented from completing a course by circumstances beyond your control, which extended over a significant period of time.

## **Results**

Final result for the course is emailed to student email addresses in mid-July for Semester 1. Results can also be viewed online by logging into MyUNSW and selecting "View Results" under "My Student Profile".

<https://my.unsw.edu.au>

## **Health and Safety**

Please read and sign the Student Risk Assessment for Wallace Wurth East G08 located on the last page of this course outline. Additional health and safety information may be provided for external or special classes.

<http://medalsciences.med.unsw.edu.au/students/health-safety>

## Academic Honesty and Plagiarism

Please read the information on plagiarism on the UNSW website.

<https://student.unsw.edu.au/plagiarism>

**What is Plagiarism?** - Plagiarism is the presentation of the thoughts or work of another as one's own.\* Examples include:

- direct duplication of the thoughts or work of another, including by 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 contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism. Knowingly permitting your work to be copied by another student may also be considered to be plagiarism. Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does not amount to plagiarism. The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via: <https://student.unsw.edu.au/plagiarism>

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

\* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle † Adapted with kind permission from the University of Melbourne.

## Course Schedule Cell Biology

(Draft timetable 2014 S1 guide only, subject to change)

Week	Date (Monday)	Lecture 1	Lecture 2	Laboratory
		Tue 12-1 pm Wallace Wurth LG02	Thu 9-10 am Wallace Wurth LG02	Thu 3-5 pm Wallace Wurth East G08
1	10 Mar	<a href="#">Cell Biology Introduction</a>	<a href="#">Cells Eukaryotes and Prokaryotes</a>	<a href="#">Introduction to Lab</a>
2	17 Mar	<a href="#">Cell Membranes Compartments</a>	<a href="#">Cell Nucleus</a>	<a href="#">Microscopy Methods</a>
3	24 Mar	<a href="#">Cell Export - Exocytosis</a>	<a href="#">Cell Import - Endocytosis</a>	<a href="#">Preparation/Fixation</a>
4	31 Mar	<a href="#">Cell Mitochondria</a>	<a href="#">Cell Junctions</a>	<a href="#">Immunochemistry</a>
5	7 Apr	<a href="#">Cytoskeleton Introduction</a>	<a href="#">Cytoskeleton 1 Intermediate Filaments</a>	<a href="#">Cell Knockout Methods</a>
6	14 Apr	<a href="#">Cytoskeleton 2 Microtubules</a>	<a href="#">Cytoskeleton 3 Microfilaments</a>	<a href="#">Cytoskeleton Exercise</a>
		Mid Semester Break	18 Apr – 27 Apr	
7	28 Apr	<a href="#">Extracellular Matrix 2</a>	<a href="#">Extracellular Matrix 2</a>	<a href="#">Project Work</a>
8	5 May	<a href="#">Cell Cycle</a>	<a href="#">Cell Division</a>	<a href="#">Confocal Microscopy</a>
9	12 May	<a href="#">Cell Death 1</a>	<a href="#">Cell Death 2</a>	<a href="#">Tissue Culture 1</a>
10	19 May	<a href="#">Signal 1</a>	<a href="#">Signal 2</a>	<a href="#">Tissue Culture 2</a>
11	26 May	<a href="#">Stem Cells 1</a>	<a href="#">Stem Cells 2</a>	<a href="#">Stem Cells Lab</a>
12	2 Jun	<a href="#">Development</a>	<a href="#">Revision</a>	<a href="#">Stem Cells Analysis</a>
	7 Jun	Study Week	7 Jun to 12 Jun	
		Examination Period*	13 Jun to 30 Jun	

\* Examination dates are provisional and subject to change

### Public Holidays

Good Friday	Friday 18 April
Easter Monday	Monday 21 April
Anzac Day	Friday 25 April
Queen's Birthday	Monday 9 June

<https://my.unsw.edu.au/student/resources/AcademicCalendar.html>

## Textbook References – Essential Cell Biology (3<sup>rd</sup> edn.)

Please note that alternative online textbooks are also available for this course and are cited in the lecture and practical online materials.

### Lecture Textbook Chapter

1	Chapter 1 Introduction to Cells pp1-38
2	Chapter 1 Introduction to Cells pp1-38
3	Chapter 11 Membrane Structure pp363-386, Chapter 12 Membrane Transport 387-424 Chapter 15 Intracellular Compartments and Transport 495-530
4	Chapter 5 DNA and Chromosomes pp171-196
5	Chapter 15 pp514-518
6	Chapter 15 pp522-529
7	Chapter 14 Energy Generation in Mitochondria and Chloroplast pp453-492
8	Chapter 20 Cellular Communities:Tissues, Stem Cells, and Cancer Epithelial Sheets and Cell Junctions pp700-705
9	Chapter 17 Cytoskeleton pp571-608
10	Chapter 17 Cytoskeleton - Intermediate Filaments pp571-576
11	Chapter 17 Cytoskeleton - Microtubules pp577-589
12	Chapter 17 Cytoskeleton - Microfilaments pp590-598
13	Chapter 20 Cellular Communities:Tissues, Stem Cells, and Cancer Extracellular Matrix and Connective Tissues pp690-699
14	Chapter 20 Cellular Communities:Tissues, Stem Cells, and Cancer Extracellular Matrix and Connective Tissues pp690-699
15	Chapter 18 The Cell Division Cycle - Overview of the Cell Cycle pp609-624
16	Chapter 18 The Cell Division Cycle - Mitosis pp625-634, Cytokinesis pp634-638
17	Chapter 18 The Cell Division Cycle - Control of Cell Number pp638-647
18	Chapter 18 The Cell Division Cycle - Control of Cell Number pp638-647
19	Chapter 16 Cell Communication pp531-570
20	Chapter 16 Cell Communication pp531-570
21	Chapter 20 Cellular Communities:Tissues, Stem Cells, and Cancer pp707-715
22	Chapter 20 Cellular Communities:Tissues, Stem Cells, and Cancer pp707-715
23	Chapter 20 Cellular Communities:Tissues, Stem Cells, and Cancer – Tissue Maintenance and Renewal pp707-709

For additional links see:

[http://php.med.unsw.edu.au/cellbiology/index.php?title=Course\\_Timetable](http://php.med.unsw.edu.au/cellbiology/index.php?title=Course_Timetable)

## Health and Safety – Risk Assessment

ScienceTeaching Laboratory

Student Risk Assessment

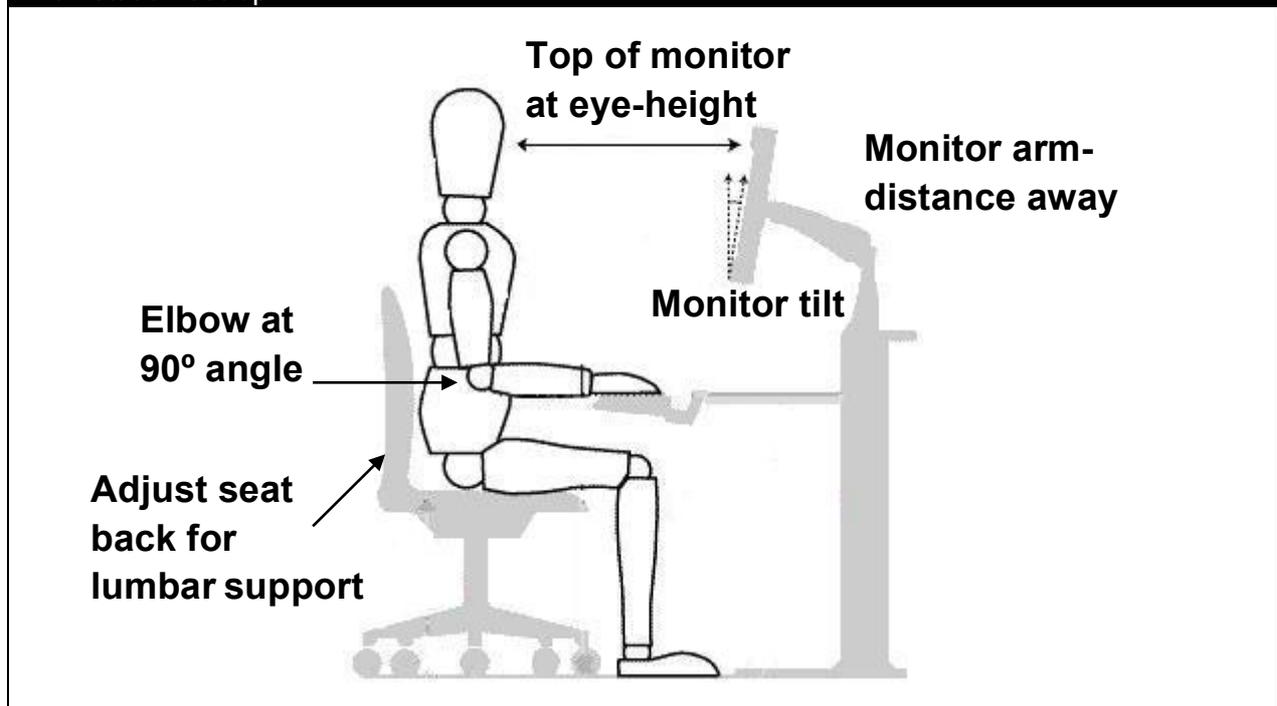


**UNSW**  
THE UNIVERSITY OF NEW SOUTH WALES

ANAT3231  
Wallace Wurth East G08  
Practicals from weeks 1 to  
12 in Semester 1, 2014.

Hazards	Risks	Controls
Ergonomics	Musculoskeletal pain.	Correct workstation set-up.
Electrical	Shock/fire	Check electrical equipment in good condition before use. All electrical equipment tested and tagged.

### Workstation set-up



### Personal Protective Equipment

Not necessary in these practicals. (see note)

### Emergency Procedures

In the event of an alarm, follow the instructions of the demonstrator. The initial sound is advising you to prepare for evacuation and during this time start packing up your things. The second sound gives instruction to leave. The Wallace Wurth assembly point is the lawn in front of the Chancellery. In the event of an injury, inform the demonstrator. First aiders contact details and Kit locations are on display by the lifts.

### Clean up and waste disposal

No apparatus or chemicals used in these practicals.

### Declaration

I have read and understand the safety requirements for these practical classes and I will observe these requirements.

Student Number:..... Signature:..... Date:.....

**Note** - Additional HS information will be provided for any external or special classes.