

1005BPS

Cell Biology and Biological Systems

Semester 1 2010

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|---------------------------------|--|
| Academic Organisation: | School of Biomolecular and Physical Sciences |
| Faculty: | Science, Environment, Engineering and Technology |
| Credit point value: | 10 |
| Student Contribution Band: | Band 4A (Nat Priority Band) |
| Course level: | Undergraduate |
| Campus/Location/Learning Mode: | Nathan / On Campus / In Person |
| Convenor/s: | Dr Sarah Ashmore (Nathan) |
| Enrolment Restrictions: | Restricted: Approval from Head of School |
| This document was last updated: | 2 December 2009 |

BRIEF COURSE DESCRIPTION

This course provides an introduction to cell biology and biological systems, including cell structure and reproduction, genetics and inheritance and introductory animal and plant physiology. The aim is to provide the essential understanding of cells and biological systems necessary for further study in the biological, ecological, biomedical and biomolecular sciences.

Co-requisite: 1101BPS Chemistry A

Incompatible: 1002BBS Cell and Molecular Biology; 1002BBS Cell Biology

Students studying in the Diploma of Biosciences at QIBT are advised to obtain their Course Outline from the following url:
http://www.qibt.qld.edu.au/index.php?option=com_content&task=view&id=120&Itemid=26. Students enrolled in this Diploma who experience difficulty obtaining the Course Outline should contact QIBT staff on (07) 3735 6900.

Restriction: Student must be enrolled in 8023 Diploma of Biosciences

SECTION A – TEACHING, LEARNING AND ASSESSMENT

COURSE AIMS

This course provides an introduction to cell biology and biological systems, including cell structure and reproduction, genetics and inheritance and introductory animal and plant physiology. The aim is to provide the essential understanding of cells and biological systems necessary for further study in the biological, ecological, biomedical and biomolecular sciences.

LEARNING OUTCOMES

Students taking this course will gain a broad understanding of biological organisms at both the cellular and whole organism level. Students will also gain appreciation of the application of this knowledge through relevant examples and workshop activities.

CONTENT, ORGANISATION AND TEACHING STRATEGIES

Topics to be covered include:

- Module 1: Cell structure and function: prokaryotic and eukaryotic cells, cell components and their functions and the biology of cell membranes.
- Module 2: Cell reproduction: cell division and the cell cycle, mitosis and meiosis.
- Module 3: DNA to protein: DNA replication, transcription and translation.
- Module 4: Genetics and inheritance: The chromosomal basis of inheritance, Mendelian genetics and an introduction to population genetics.
- Module 5: Plant physiology: Respiratory and photosynthetic pathways, introduction to the plant kingdom, plant structure and function.
- Module 6: Animal Physiology: Introduction to the animal kingdom, respiratory systems, digestion and circulation and gas exchange.

The course will consist of 4 hours of teaching per week in a combination of lectures and workshops.

CONTENT SUMMARY

This course covers the concepts of cell biology and reproduction, genetics and inheritance and animal and plant physiology.

ASSESSMENT

| Item | Assessment Task | Length | Weighting | Total Marks | Relevant Learning Outcomes | Due Day and Time |
|------|-----------------------------|---------|-----------|-------------|---|---|
| 1. | Workshop Quiz | 30 mins | 15% | 15 | Ability to apply course concepts and content to problems. | Week 6 |
| 2. | Mid-semester Exam | 60 mins | 30% | 60 | Understanding of course concepts and content. | Week 7 |
| 3. | Workshop Quiz | 30 mins | 15% | 15 | Ability to apply course concepts and content to problems. | Week 10 |
| 4. | End of semester examination | 90 mins | 40% | 100 | Understanding of course concepts and content, including ability to apply course concepts and content to problems. | During end of semester examination period |

The workshop quizzes will allow students to have feed-back on their progress during the semester. These will assess comprehension of material covered in workshops and will include problem-based questions and data analysis. The mid-semester and end of semester examinations will assess overall understanding of course concepts and content. Students will be provided with results of each workshop quiz and the mid-semester exam within 2 weeks of submission and feedback and queries related to performance in these will be handled in workshop sessions and/or lectures following return of each assessment result.

GRADUATE SKILLS

| Graduate Skills | Taught | Practised | Assessed |
|--|-------------------------------------|-------------------------------------|-------------------------------------|
| Effective communication (written) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Effective communication (oral) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Effective communication (interpersonal) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Information literacy | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Problem solving | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Critical evaluation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Work autonomously | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Work in teams | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Creativity and innovation | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Ethical behaviour in social / professional / work environments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Responsible, effective citizenship | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

TEACHING TEAM

Course Convenor

| Convenor Details | Nathan |
|--------------------|---|
| Campus Convenor | Dr Sarah Ashmore |
| Email | s.ashmore@griffith.edu.au |
| Office Location | N34 2.28 |
| Phone | 37357346 |
| Fax | 37357656 |
| Consultation times | To be advised during lectures in week 1 |

COURSE COMMUNICATIONS

Notices will be posted on the learning@griffith website. Individual lecturers will indicate mechanisms for communication during teaching sessions.

TEXTS AND SUPPORTING MATERIALS

Prescribed Text

Campbell, N.A. et al (2009) Biology 8th Edition Australian Version, Pearson Education

SECTION B – ADDITIONAL COURSE INFORMATION

Students should refer to the Learning@Griffith website for further information about this course.

SECTION C – KEY UNIVERSITY INFORMATION

ACADEMIC MISCONDUCT

Students must conduct their studies at the University honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is academic misconduct and is unacceptable.

Some students engage deliberately in academic misconduct, with intent to deceive. This conscious, pre-mediated form of cheating is one of the worst forms of fraudulent academic behaviour, for which the University has zero tolerance and for which penalties, including exclusion from the University, will be applied.

However the University recognises many students commit academic misconduct without intent to deceive. These students may be required to undertake additional educational activities to remediate their behaviour.

Specifically it is academic misconduct for a student to:

- **Cheat in examinations and tests** by communicating, or attempting to communicate, with a fellow individual who is neither an invigilator or member of staff; by copying, or attempting to copy from a

fellow candidate; attempting to introduce or consult during the examination, any unauthorised printed or written material, or electronic calculating or information storage device; or mobile phones or other communication device, or impersonates another.

- **Fabricate results** by claiming to have carried out tests, experiments or observations that have not taken place or by presenting results not supported by the evidence with the object of obtaining an unfair advantage.
- **Misrepresent themselves** by presenting an untrue statement or not disclosing where there is a duty to disclose in order to create a false appearance or identity.
- **Plagiarise** by representing the work of another as their own original work, without appropriate acknowledgement of the author or the source. This category of cheating includes the following:
 1. collusion, where a piece of work prepared by a group is represented as if it were the student's own;
 2. acquiring or commissioning a piece of work, which is not his/her own and representing it as if it were, by
 - purchasing a paper from a commercial service, including internet sites, whether pre-written or specially prepared for the student concerned
 - submitting a paper written by another person, either by a fellow student or a person who is not a member of the University;
 3. duplication of the same or almost identical work for more than one assessment item;
 4. copying ideas, concepts, research data, images, sounds or text;
 5. paraphrasing a paper from a source text, whether in manuscript, printed or electronic form, without appropriate acknowledgement;
 6. cutting or pasting statements from multiple sources or piecing together work of others and representing them as original work;
 7. submitting, as one own work, all or part of another student's work, even with the student's knowledge or consent.

A student who willingly assists another student to plagiarise (for example by willingly giving them their own work to copy from) is also breaching academic integrity, and may be subject to disciplinary action.

Visit the following web sites for further details:

[Institutional Framework for Promoting Academic Integrity among Students](#)
[Academic integrity for students](#)

PLAGIARISM DETECTION SOFTWARE

The University uses plagiarism detection software. Students should be aware that your Course Convenor may use this software to check submitted assignments. If this is the case your Course Convenor will provide more detailed information about how the detection software will be used for individual assessment items.

HEALTH AND SAFETY

Griffith University is committed to providing a safe work and study environment, however all students, staff and visitors have an obligation to ensure the safety of themselves and those whose safety may be affected by their actions. Staff in control of learning activities will ensure as far as reasonably practical, that those activities are safe and that all safety obligations are being met. Students are required to comply with all safety instructions and are requested to report safety concerns to the University.

General health and safety information can be obtained from
http://www.griffith.edu.au/hrm/health_and_safety/

Information about Laboratory safety can be obtained from
http://www.griffith.edu.au/ots/secure/health/content_labsafety.html

KEY STUDENT-RELATED POLICIES

All University policy documents are accessible to students via the University's Policy Library website at: www.griffith.edu.au/policylibrary. Links to key policy documents are included below for easy reference:

[Academic Calendar](#)

[Academic Standing, Progression and Exclusion Policy](#)

[Assessment Policy](#)

[Examinations Timetabling Policy and Procedures](#)

[Guideline on Student E-Mail](#)

[Health and Safety Policy](#)

[Institutional Framework for Promoting Academic Integrity Among Students](#)

[Policy on Student Grievances and Appeals](#)

[Student Administration Policy](#)

[Student Charter](#)

UNIVERSITY SUPPORT RESOURCES

The University provides many facilities and support services to assist students in their studies. Links to information about University support resources available to students are included below for easy reference:

[Learning Centres](#) - the University provides access to common use computing facilities for educational purposes. For details visit www.griffith.edu.au/cuse

[Learning@Griffith](#) - there is a dedicated website for this course via the Learning@Griffith student portal.

[Student Services](#) facilitate student access to and success at their academic studies. Student Services includes: Careers and Employment Service; Chaplaincy; Counselling Service; Health Service; Student Equity Services (incorporating the Disabilities Service); and the Welfare Office.

[Learning Services](#) within the Division of Information Services provides learning support in three skill areas: computing skills; library skills; and academic skills. The study skills resources on the website include self-help tasks focusing on critical thinking, exam skills, note taking, preparing presentations, referencing, writing, proof reading, and time management.