



Queensland, Australia

Course Code:	1041SCG
Course Name:	Biological Systems
Semester:	Semester 1, 2016
Program:	Diploma of Biosciences
Credit Points:	10
Course Coordinator:	Dr Dayana Matthews
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Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.	
Name	Email
Dr Dayana Matthews	dayana.matthews@staff.griffithcollege.edu.au

Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the "myTimetable" link.

Prerequisites

There are no prerequisites for this course

Brief Course Description

Biological Systems is an introductory course that provides an appreciation of the main concepts of modern biology. Students will gain an understanding of the origin, function and structure of living organisms by examining life at increasing levels of biological complexity, from the molecular and cellular level to whole organisms and ecosystems. Course content will be delivered through a combination of lectures, workshops, laboratory sessions and online material. Co-requisite: 1021SCG Chemistry 1A Incompatible: 1005BPS Cell Biology & Biological Systems; 1601ENV Biological Systems; 1002BBS Cell Biology; 1002BBS Cell and Molecular Biology

Rationale

This course provides an introduction to the biology of organisms. It is a basic biology course that can be used as a foundation for those not wishing to study biology further but is essential background for students wishing to undertake further study in the biological, ecological, biomedical and biomolecular sciences. It includes an understanding of the classification of biological organisms, the underlying differences in cell structure and function of prokaryotes and eukaryotes. The course also covers plant and animal biology through the understanding of central metabolic pathways, plant and animal diversity with particular emphasis on how the structure of organisms influences how they function in different environments.

Aims

This course provides an introduction to cell biology and biological systems, including cell structure and reproduction and introductory animal and plant biology. 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

Upon successful completion of this course students will be able to:

- 1 Demonstrate a broad understanding of biological organisms at both the cellular and whole organism level.
- 2 To use basic laboratory equipment to examine biological specimens.
- 3 Work effectively with other students in the laboratory.
- 4 Produce written laboratory reports for assessment and feedback.
- 5 Apply knowledge gained to formulate possible solutions to set problems.

Texts and Supporting Materials

Prescribed Text

Campbell, N.A et al (2012) Biology 9th Edition Australian Version, Pearson Education

OR

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

Recommended Textbooks:

Hillis, D.M., Sadava, D., Heller, H.C. and Price, M (2012) Principles of Life. Sinauer Associates MA U.S.A

Organisation and Teaching Strategies

The Course is taught by using a variety of teaching and learning activities including lectures and intensive, facilitated workshops/tutorials and laboratory sessions.

Topics to be covered include:

Module 1: Cell & Molecular Biology

Module 2: Evolution and Introduction to Diversity of Life

Module 3: Animal Diversity and Animal Systems Module 4: Fungi and Plant Diversity

Module 5: Ecology and ecosystems

Class Contact Summary

The lectures (3 hr) will provide an overview and discussion of key material of each module topic, and the workshops will examine and discuss material in greater depth to allow you the opportunity to develop and consolidate your learning and test your knowledge of the subject material on an ongoing basis.

Workshop (1hr) sessions will be used to focus your attention on the learning objectives for each module and as a small group activity will enable the development of effective communication skills.

Tutorial (1hr) sessions will allow consolidation of module content, providing the opportunity to focus on specific topics through group discussion, worksheets and web-based tasks.

Laboratory sessions (Two 2 hr & One 4 hr) will allow you to apply information learnt in lectures, tutorials and workshops and become familiar with the general approach common to all studies of biological systems.

Program Progression

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80% and that GPA is maintained at equal to or greater than 3.5 [please see Griffith College Policy Library - Program progression Policy - for more information].

Content Schedule

PLEASE NOTE: Lab classes for this course will be:

Thursday 19 May
1.00 - 5.00 pm
Labs 1 & 2

Friday 20 May
1.00 - 3.00 pm
Lab 3

Friday 27 May
1 - 3 pm
Lab 4

Weekly Teaching Schedule

Week	Topic	Activity	Readings
1	Introduction, Biology and the origin of Life, Proteins and enzymes	Lecture	Text book Ch. 1, 5 & 8
2	DNA and the Central Dogma, Cells, Membrane structure and function	Lecture	Ch. 5, 6 & 7
3	Introduction to Metabolism, respiration, and photosynthesis	Lecture	Ch. 8, 9 & 10
	Module Quiz 1 (on Weeks 1 & 2 content)	Tutorial	
4	Cell division (Mitosis & Meiosis), Evolution: Descent with modification History of life on Earth	Lecture	Ch. 12, 13 & 22
5	Prokaryotes: Bacteria & Archaea, Eukaryotes: Protista Animal origins and Diversity I	Lecture	Ch. 27, 28, 32 & 33
	Module Quiz 2 (on Weeks 3 & 4 content)	Tutorial	
6	Animal Diversity II Fundamentals of Animal Function Nutrition & Digestion	Lecture	Ch. 34, 40 & 41

7	Breathing, Circulation, Muscles and Movement	Lecture	Ch. 42 & 50
	Module Quiz 3 (on Weeks 4 & 5 content)	Tutorial	
8	Excretion, Animal development (after fertilization), Animal defence: basic immunology	Lecture	Ch. 44, 47 & 43
9	Animal behaviour, Fungi, Mosses & Ferns	Lecture	Ch. 51, 31, 29 & 30
	Module Quiz 4 (on Weeks 6, 7 & 8 content)	Tutorial	
10	Gymnosperms & Angiosperms, Plant Structure: the plant body	Lecture	Ch. 30 & 35
11	Nutrition and Transport in Plants Plant defences and Plant behaviour	Lecture	Ch. 36 & 39
12	Distribution of Ecological systems Global Ecosystems The Emerald Planet – Ecology	Lecture	Ch. 52
	Module Quiz 5 on Weeks 9, 10 & 11 content)	Tutorial	
13	Revision	Lecture	
14	FINAL EXAMINATION	Assessment	

Assessment

This section sets out the assessment requirements for this course.

Summary of Assessment

Item	Assessment Task	Weighting	Relevant Learning Outcomes	Due Date
1	Laboratory Reports	30%	1,2,3,4,5	11 & 12
2	5 Module Quizzes	25%	1,5	3, 5, 7, 9 & 12
3	Final Exam	45%	1,5	14

Assessment Details

Laboratory reports

Type: Assignment - Written Assignment

Weight: 30%

Task Description:

Reports to be submitted at the end of each compulsory laboratory session.

Criteria & Marking:

Students have completed all aspects of the report.

Marks will be awarded for all correct answers as indicated on the report proforma.

Students should normally submit 4 reports in Weeks 11 and 12, on Microscope, Respiration, Plants, Animal Diversity, Body size & shape. Each report will be marked out of 10 and the marks for the best 3 reports will be used to provide the final mark out of 30.

Submission: Reports must be handed directly to the staff at the end of the laboratory session.

5 Module Quizzes

Type: selected and constructed responses

Weight: 5% each, total 25%

Perusal: 5 minutes

Duration: 20 minutes

Format: Closed Book

Task Description:

Selected response and written short answer response.

Criteria & Marking:

Marks will be awarded for correct responses.

Final Exam

Type: Exam - selected and constructed responses

Weight: 45%

Perusal: 10 minutes

Duration: 150 minutes

Format: Closed Book

Task Description:

Understanding of course concepts and content, including ability to apply course concepts and content to problems.

Criteria & Marking:

Marks will be awarded for correct responses.

To pass this course you must achieve an aggregate of at least 50%

Submission and Return of Assessment Items

Normally you will be able to collect your assignments in class within fourteen [14] days of the due date for submission of the assignment.

Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

Extensions

To apply for an extension of time for an assignment, you must submit an Application for Extension of Assignment form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. Griffith College Medical Certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

Assessment Feedback

Marks awarded for assessment items will also be available on the on-line grades system on the Student Website within fourteen [14] days of the due date.

Generic Skills

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

Generic Skills	Taught	Practised	Assessed
Written Communication	Yes	Yes	Yes
Oral Communication	Yes	Yes	
Information Literacy	Yes	Yes	Yes
Secondary Research	Yes	Yes	
Critical and Innovative Thinking	Yes	Yes	Yes
Academic Integrity	Yes	Yes	Yes
Self Directed Learning	Yes	Yes	Yes
Team Work	Yes	Yes	
Cultural Intelligence	Yes	Yes	
English Language Proficiency	Yes	Yes	Yes

Additional Course Generic Skills

Specific Skills	Taught	Practised	Assessed
Ethical Behaviour in social/professional/work environments	Yes	Yes	Yes
Work Autonomously	Yes	Yes	Yes

Additional Course Information

Teacher and Course Evaluations

Past students commented that the pace, content and comprehensive course structure supported and encouraged their learning in a positive way. They also liked the mini-conference format of the genetics seminars that generated discussion and debate, as well as the hands on participation in the practical sessions. In response to student feedback for more collaborative and social learning opportunities, team-based concept mapping exercises on making visual summaries of course content have been designed. These maps are also very helpful for revision of content.

Your feedback is respected and valued by your lecturers and tutors. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your lecturer and tutor or by completing course and lecturer evaluations via Griffith College's online evaluation tool whenever these are available.

Academic Integrity

Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

Please ensure that you are familiar with the [Griffith College Academic Integrity Policy](#); this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Academic Integrity Policy on the Griffith College website – Policy Library.

Risk Assessment Statement

This course follows Griffith College and Griffith University Workplace Health and Safety Laboratory guidelines.

The aim of workplace health and safety is to make sure that people do not get sick or injured at the workplace. The legislation dealing with this in Queensland is called the Workplace Health and Safety Act, 1995. Anyone who can affect workplace health and safety has an obligation under this Act.

As a student, you have an obligation to yourself and others to undertake activities in a safe manner. You must follow instructions which are provided for safety. You must not put yourself or anyone else at risk. Care especially needs to be taken when you are performing activities which can affect others.

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