



Course Code:	1041SCG
Course Name:	Biological Systems
Semester:	Trimester 1, 2017
Program:	Diploma of Biosciences
	Diploma of Science
Credit Points:	10
Course Coordinator:	Dr Dayana Matthews
Document modified:	1 March 2017

Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

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 Explain 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.
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Texts and Supporting Materials

Prescribed Text

Hillis, D.M., Sadava, D., Hill R.W. and Price, M.V. (2012) Principles of Life. Second Edition 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:

1. Cell Biology & Cell Division
2. Evolution and Introduction to Diversity of Life
3. Fungi, Animal Diversity, Animal Form & Function
4. Plant Diversity, Plant Form & Function

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 (Five 2 hour sessions) 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:

In Weeks 2, 6, 8, 10 & 12 on Fridays from 12 to 2 pm. .

Weekly Teaching Schedule

Week	Topic	Activity	Readings
1	Introduction, Biology and the origin of Life, Scientific Method Large Biological Molecules, Central Dogma, Proteins & Enzymes	Lecture	Text book Ch.1, 2 & 3,
2	Cells & cell components, Membrane structure and function	Lecture	Ch. 4 & 5
3	Introduction to Metabolism, Respiration & Photosynthesis	Lecture	Ch. 6
	Module Quiz 1 (on Weeks 1 & 2 content)	Tutorial	
4	Cell Division – Mitosis & Meiosis	Lecture	Ch. 7
5	Biogeography & Evolution: Descent with modification	Lecture	Ch. 14
	Module Quiz 2 (on Weeks 3 & 4 content)	Tutorial	
6	Phylogeny & the Tree of Life Prokaryotes: Bacteria & Archaea	Lecture	Ch 19
7	Eukaryotes: Protista & Fungi	Lecture	Ch. 20 & 22
	Module Quiz 3 (on Weeks 5 & 6 content)	Tutorial	
8	Animal origins & Diversity:	Lecture	Ch. 23, 29 & 30

	Animal form & function: Nutrition & Digestion		
9	Gas exchange Circulation Muscles and Movement Osmoregulation & Excretion,	Lecture	Ch. 31, 32, 33 & 36
	Module Quiz 4 (on Weeks 7 & 8 content)	Tutorial	
10	Plant Diversity Non-vascular Plants - Mosses & Ferns Vascular Plants - Gymnosperms & Angiosperms,	Lecture	Ch. 21
11	The Plant Body Plant Nutrition and Transport , Module Quiz 5 on Weeks 9 & 10 content)	Lecture	Ch. 24 & 25
12	Plant Growth & Development: Flowers Animal & Plant Interactions	Lecture	Ch. 26 & 27
		Tutorial	
13	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	Weekly feedback Quizzes	10%	1, 5	Weekly
2	Laboratory Reports	20%	1,2,3,4,5	Weeks 2, 6, 8, 10 & 12
3	5 Module Quizzes	25%	1,5	3, 5, 7, 9 & 11
4	Final Exam	45%	1,5	13

Assessment Details

Weekly Feedback Quizzes

Type: Quiz

Weight: 10%

Task Description:

Weekly quiz of Multiple Choice Questions

Criteria & Marking:

Correct response to Multiple Choice Questions, each quiz is worth 1% of marks

Submission:

In class Week 2 to 12 inclusive

Laboratory reports

Type: Assignment - Written Assignment

Weight: 20 %

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 5 reports in Weeks, on Cells, Cell Division, Heart Dissection, Major plant groups, Flowers and herbivory. Each report will be marked out of 10 and the marks adjusted to provide the final mark out of 20.

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: 30 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 assessments in class within fourteen [14] days of the due date for submission of the assessment.

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 assessment item you must submit a written request to your lecturer via the Student Website at least 48 hours before the date the assessment item 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. medical certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

Penalties for late submission without an approved extension

Penalties apply to assignments that are submitted after the due date without an approved extension. Assessment submitted after the due date will be penalised 10% of the TOTAL marks available for assessment (not the mark awarded) for each day the assessment is late. Assessment submitted more than five days late will be awarded a mark of zero (0) For example:

- > 5 minutes and <= 24 hours 10%
- > 24 hours and <= 48 hours 20%
- > 48 hours and <= 72 hours 30%
- > 72 hours and <= 96 hours 40%
- > 96 hours and <= 120 hours 50%
- > 120 hours 100%

Note:

- Two day weekends will count as one day in the calculation of a penalty for late submission.
- When a public holiday falls immediately before or after a weekend, the three days will count as one day in the calculation of a penalty for late submission.
- When two public holidays (e.g. Easter), fall immediately before or after, or one day either side of a weekend, the four days will count as two days in calculating the penalty for late submission.
- When a single public holiday falls mid-week, the day will not be counted towards the calculation of a penalty.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

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 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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