BIOL12107 *Genomes, Genetics & Evolution*
Term 3 - 2017

Profile information current as at 06/05/2024 09:13 pm

General Information

Overview
This unit focuses on the role of the genome in adaptive change in living organisms, particularly animals. It brings together recent advances in our understanding of the genome and the impact of these on the traditional areas of zoology, particularly those involving evolutionary processes. The unit provides a link between molecular biology and other areas of biology including genetics, evolution, taxonomy, embryology and behaviour. The latter part of the unit focuses on various aspects of human evolution.

Details
Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Prerequisites BIOL11099 Living Systems or BMSC11002 Human Body Systems 1 or BIOH11005 Introductory Anatomy & Physiology
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 3 - 2017

- Distance

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 30%
2. **Online Quiz(zes)**
Weighting: 20%
3. **Examination**
Weighting: 50%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Moodle feedback

Feedback

What aspects of your unit are most in need of improvement? If you wish, you can expand and explain your answers above. Nothing. This subject was an absolute joy. Thank you. I found the course being great as it is. Its perfect just as it is No improvements !! No improvement needed on this one.

Recommendation

There are no major changes planned for this course other than more up to date videos and more resources for those that wish to learn more.

Feedback from Moodle feedback

Feedback

A few of the lectures may need re-recording due to outdated references to assignments

Recommendation

This is the only comment that did not praise the course. The comment referrers to video where "hypothetical" essay topic was discussed as an example. This did not mean that this was their essay. I had questions last year about this and I stressed it was juts an example. I will clarify this better for the next year.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Use correct terminology to describe genetics, genomes and evolution.
2. Discuss the concepts of heritability, mutation, development, Mendelian genetics, extranuclear and multi-allelic inheritance, the Hardy-Wienberg Law and related topics in quantitative genetics.
3. Explain the mechanisms of change in the genome including the concepts of genetic disorders adaptation and speciation.
4. Discuss behavioral and population genetics, socio-biology and ethics.

NA

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level ◦ Introductory Level • Intermediate Level • Graduate Level ◦ Professional Level ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Written Assessment - 30%	•	•	•	•
2 - Online Quiz(zes) - 20%	•			
3 - Examination - 50%	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Communication	•	•	•	•
2 - Problem Solving				
3 - Critical Thinking		•		•
4 - Information Literacy	•		•	•
5 - Team Work				
6 - Information Technology Competence		•		
7 - Cross Cultural Competence				•
8 - Ethical practice				•
9 - Social Innovation				
10 - Aboriginal and Torres Strait Islander Cultures				

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 30%	•	•	•	•		•				
2 - Online Quiz(zes) - 20%		•	•	•		•				
3 - Examination - 50%	•	•	•							

Textbooks and Resources

Textbooks

BIOL12107

Supplementary

Concepts of genetics
Edition: 10th edn (Pearson New International Ediion) (2013)
Authors: Klug, W
Pearson USA
Upper Saddle River , NJ , USA
ISBN: 9781292026343
Binding: Hardcover

Additional Textbook Information
Purchase of the book is not required; material presented in lectures is all the students will need for successful completion of the unit. However, the lecture videos follow chapters and material from **Concepts of Genetics** by Klug W, Cummings M, Spencer C and Palladino M (Pearson) and any edition of this book may be helpful for students that want to get more from this unit.

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Dana Stanley Unit Coordinator
d.stanley@cqu.edu.au

Schedule

Week 1 - 06 Nov 2017

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to genomes	1, 2	

Week 2 - 13 Nov 2017

Module/Topic	Chapter	Events and Submissions/Topic
Mutation, DNA repair and transposition	12-15	

Week 3 - 20 Nov 2017

Module/Topic	Chapter	Events and Submissions/Topic
Mendelian genetics	3	

Week 4 - 27 Nov 2017

Module/Topic	Chapter	Events and Submissions/Topic

Non-Mendelian genetics	4	

Vacation Week - 04 Dec 2017

Module/Topic	Chapter	Events and Submissions/Topic

Week 5 - 11 Dec 2017

Module/Topic	Chapter	Events and Submissions/Topic
Chromosome mapping	5-7	

Week 6 - 18 Dec 2017

Module/Topic	Chapter	Events and Submissions/Topic
Extranuclear inheritance	8, 9	

Week 7 - 01 Jan 2018

Module/Topic	Chapter	Events and Submissions/Topic
Developmental genetics	18, 19	

Week 8 - 08 Jan 2018

Module/Topic	Chapter	Events and Submissions/Topic
Genetics of behaviour; population and sociobiology	24	

Week 9 - 15 Jan 2018

Module/Topic	Chapter	Events and Submissions/Topic
Genes meet social science - ethics and genetics	22	

Week 10 - 22 Jan 2018

Module/Topic	Chapter	Events and Submissions/Topic
Evolutionary and conservation genetics	25, 26	

Week 11 - 29 Jan 2018

Module/Topic	Chapter	Events and Submissions/Topic
Genomics, Proteomics and Bioinformatics	21	Written assessment due Monday 29/01/2018 **Essay** Due: Week 11 Monday (29 Jan 2018) 11:55 pm AEST

Week 12 - 05 Feb 2018

Module/Topic	Chapter	Events and Submissions/Topic
Current research in genetics	Latest research review	Online quiz open on Wednesday 07/02/2018 **Online Quiz(zes)** Due: Week 12 Wednesday (7 Feb 2018) 11:55 pm AEST

Review/Exam Week - 12 Feb 2018

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 12 Feb 2018

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Essay

Assessment Type
Written Assessment

Task Description
Write an essay discussing The Advantages and Disadvantages of Genetic Modification.
Include an overview of current techniques used in genetic manipulation, and discuss potential developments and future uses of GM technologies.
Word length 2000-3000 words excluding references.
You will be given an opportunity to email a draft to the course coordinator for feedback before you submit. No marks will be given at the feedback stage, but you will get the advice on how to improve your work.
Multiple videos on how to prepare this assignment are available on Moodle. The videos cover every aspect of the essay writing, like what to cover, the structure, referencing and getting the most out of MS Word in terms of formatting and revisions. Additional support provided during assignment writing is also outlined on Moodle.

Assessment Due Date
Week 11 Monday (29 Jan 2018) 11:55 pm AEST
Submit the assement by due date.

Return Date to Students
Review/Exam Week Monday (12 Feb 2018)

Weighting
30%

Minimum mark or grade
40%

Assessment Criteria
Details of assessment criteria will be provided in week 4 tutorial on Moodle. The criteria will include:

- Quality of the literature discussed (40%)
- Complexity of the content (20%)
- Presentation (20%)
- Clarity of expression (10%)
- Referencing (10%)

Additional particular details on each assessment criteria are available on Moodle.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
All submissions must be done in Moodle. Upload MS Word documents only, no pdf. Feedback will be provided in track change mode.

Learning Outcomes Assessed

- Use correct terminology to describe genetics, genomes and evolution.
- Discuss the concepts of heritability, mutation, development, Mendelian genetics, extranuclear and multi-allelic inheritance, the Hardy-Wienberg Law and related topics in quantitative genetics.
- Explain the mechanisms of change in the genome including the concepts of genetic disorders adaptation and speciation.
- Discuss behavioral and population genetics, socio-biology and ethics.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 Online Quiz(zes)

Assessment Type
Online Quiz(zes)

Task Description
Your second assessment is 50 question online multiple choice quiz.
The questions in the quiz are randomly chosen from the weekly quizzes that you will have access to ONLY during that particular week, so use this bonus to prepare for this assessment. A practice quiz will be provided 3 days before the quiz opens. You will have only 1 attempt at the Quiz, so use the practice quiz.
You will have 60 minutes to finish the quiz. This is a bit over 1 minute per question.
NOTE: This quiz will be open for 1 day (24 hours) ONLY. The quiz will be open all day, Wednesday 07/02/2018 (Week 12) until 11:55 PM.
In the absence of an approved extension (through Moodle, with documentary evidence) there will be no late submissions for this assessment.
More information on quizzes will be in Moodle welcome video.

Number of Quizzes
1

Frequency of Quizzes

Assessment Due Date
Week 12 Wednesday (7 Feb 2018) 11:55 pm AEST

Return Date to Students
Week 12 Wednesday (7 Feb 2018)
The quiz is open for 24 hours. The results will be immediately visible to students.

Weighting
20%

Minimum mark or grade
40%

Assessment Criteria
Each correct question will score one mark.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Use correct terminology to describe genetics, genomes and evolution.

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
50%

Length
120 minutes

Minimum mark or grade
50%

Exam Conditions
Closed Book.

Materials
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem