AGRI11007 *Agricultural Breeding Strategies*
Term 2 - 2018

Profile information current as at 17/05/2024 02:42 pm

All details in this unit profile for AGRI11007 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

This unit will provide you with a framework for the development and application of agricultural breeding strategies. The applied component of the unit is built on the VET 'Developing and implementing a breeding strategy' unit to demonstrate the application of modern genetic selection tools. You will be provided with a broad overview of both molecular and quantitative genetic selection tools and will develop and implement a breeding program; define the standard required to develop a breeding objective; implement gene-based selection strategies; use industry programs to benchmark and identify sources of genetic material; and monitor progress in a breeding program. The unit will also consider the ethical and social implications of genetic modification and how this might influence management decisions.

Details

Career Level: *Undergraduate*
Unit Level: *Level 1*
Credit Points: *6*
Student Contribution Band: *7*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

There are no requisites for this unit.
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 2 - 2018

- Bundaberg
- Emerald
- Mixed Mode
- Rockhampton

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. **Portfolio**
Weighting: 60%
2. **Presentation and Written Assessment**
Weighting: 40%

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 Students

Feedback

There was a lack of communication about when field trips were happening between the QATC staff and the students.

Recommendation

Emphasise the role of the Unit Coordinator and promote them as the main point of contact.

Unit Learning Outcomes

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

1. Select appropriate tools for a genetic improvement plan.
2. Develop a breeding program based on heritability and economic returns.
3. Monitor and evaluate a breeding program.
4. Critique the social and ethical implications of genetic modification.

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 - Portfolio - 60%			•	•
2 - Presentation and Written Assessment - 40%	•	•		

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			•	•

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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 - Portfolio - 60%	•	•	•	•	•	•	•	•		
2 - Presentation and Written Assessment - 40%	•	•	•	•		•		•		

Textbooks and Resources

Textbooks
AGRI11007

Prescribed

Beef Cattle Production and Trade
(2014)
Authors: Cottle , David & Kahn , Lewis
CSIRO Publishing
Collingwood , Vic , Australia
ISBN: 9780643109889
Binding: Paperback

Additional Textbook Information
This textbook will be required for future livestock related subjects.

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: American Psychological Association 6th Edition (APA 6th edition)
For further information, see the Assessment Tasks.

Teaching Contacts

Daniel Cozzolino Unit Coordinator
d.cozzolino@cqu.edu.au

Schedule

Week 1 - 09 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to genetics & breeding in crops and livestock		

Week 2 - 16 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Molecular genetics, QTL, epigenetics		

Week 3 - 23 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Phenotypes and traits		

Week 4 - 30 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Animal selection & breeding		Portfolio - Part A. Due date week 4 (Friday 3 August, 5 PM).

Week 5 - 06 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Crop selection & Breeding		Field trip Crops (8AM-1PM) - Selection and Breeding

Vacation Week - 13 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 20 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Develop, monitor & evaluate a crop breeding program		Field trip Crops (8AM-1PM) - Monitor and Evaluate. Portfolio - Part B. Due date week 6 (Friday 24 August 5 PM).

Week 7 - 27 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Develop a livestock breeding program		

Week 8 - 03 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Modern tools in breeding and selection, modelling and simulation		

Week 9 - 10 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Monitor a livestock breeding program		Field trip Livestock (8AM-1PM) - Selection and Breeding

Week 10 - 17 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic

		Field trip Livestock (8AM-1PM) - Monitor and Evaluate. Portfolio - Part C. Due date week 10 (Friday 21 September, 5 PM).

Week 11 - 24 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Genetic resources, germplasm banks, adaptation		

Week 12 - 01 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
Social and ethical implications of genetic modification in crops and livestock		**Development of a breeding program plan** Due: Week 12 Friday (5 Oct 2018) 5:00 pm AEST

Review/Exam Week - 08 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 15 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Breeding Strategy Portfolio

Assessment Type
Portfolio

Task Description
The portfolio is made up of a series of activities undertaken in the tutorials, practical sessions, field trips. Activities will include the monitoring and evaluation of a breeding program, a critique the social and ethical implications of genetic modification, and a quiz.
There is a pass/fail component for attendance at practical sessions and field trips and attendance is compulsory.
PART A. Quiz (30 marks) (Due date Week 4)
The quiz will consists of online multiple choice questions and short answers from the lectures, tutorials, prac and field trips from week 1 to week 4. The quiz will be open on Monday and close Friday of week 4.
PART B. OH&S Short report (15 marks) (Due date Week 6)
This activity consists of a short report (700 - 800 words) discussing key safe workplace and environmentally responsible practices that are important in a breeding program.
PART C. Short video (15 marks) (Due date week 10)
The presentation consists of an individual short video (5 min. max.) describing a selected genetic tool to be applied in a genetic improvement plan.

Assessment Due Date

Part A. Due date week 4 (Friday 3 August, 5 PM). Part B. Due date week 6 (Friday 24 August 5 PM). Part C. Due date week 10 (Friday 21 September, 5 PM).

Return Date to Students

10 working days after due date for each part.

Weighting
60%

Minimum mark or grade
50%

Assessment Criteria
Students will be marked on:
- Properly addressing the question(s)
- Content

- Referencing/research
A full marking rubric for each part of this assessment will be available on the Moodle site. The criteria and rubrics will be set by Queensland Agricultural Training College to ensure they align with Diploma competencies.
Students receiving unsatisfactory marks (<50% or unfilled units of competency) will be given the opportunity to re-submit their work at the end of the term.

Referencing Style

- [American Psychological Association 6th Edition (APA 6th edition)](#)

Submission
Online

Learning Outcomes Assessed

- Monitor and evaluate a breeding program.
- Critique the social and ethical implications of genetic modification.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 Development of a breeding program plan

Assessment Type
Presentation and Written Assessment

Task Description
Development of a breeding program plan (Due date week 12)
The assessment consists of a written report that details the development of a breeding program plan (livestock or crop) based on sound scientific background and economic returns. The written report should have an introduction to the tasks, aims or objectives, content, conclusions and references. The number of words required is between 1200 and 1500. The breeding plan should include the following:
- Select a livestock or crop trait for improvement using a breeding program,
- Identify appropriate tools to be used in your genetic improvement plan,
- Describe and discuss how the breeding strategy will be implemented ,
- Outline how you will monitor and evaluate the success of the breeding strategy both in relation to heritability and economic returns.

Assessment Due Date
Week 12 Friday (5 Oct 2018) 5:00 pm AEST

Return Date to Students

10 working days after due date for each part.

Weighting
40%

Minimum mark or grade
50%

Assessment Criteria
There is a pass/fail component for attendance at practical sessions and field trips and attendance is compulsory.
Students will be marked on:
- Properly addressing the question(s)
- Content
- Presentation
- Referencing/research
The assessment Parts will be marked based on criteria set by Queensland Agricultural Training Colleges. Marking rubrics are available on the Moodle site.
Students receiving unsatisfactory marks (<50% or unfilled units of competency) will be given the opportunity to re-

submit their work.

Referencing Style

- [American Psychological Association 6th Edition (APA 6th edition)](#)

Submission
Online

Learning Outcomes Assessed

- Select appropriate tools for a genetic improvement plan.
- Develop a breeding program based on heritability and economic returns.

Graduate Attributes

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

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