



AGRI11007 Agricultural Breeding Strategies

Term 2 - 2019

Profile information current as at 03/05/2024 02:28 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 - 2019

- 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 Self-reflection

Feedback

Need to improve the response rate.

Recommendation

Students will be reminded and encouraged to complete the unit evaluation forms. This will be done during lectures/tutorials and via emails and through Moodle.

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



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

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Microsoft Office
- PowerPoint
- Video/audio recording device (e.g. a android/iphone, tablet, Gopro or computer with a webcam)

Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

Teaching Contacts

Jaime Manning Unit Coordinator
j.k.manning@cqu.edu.au

Schedule

Week 1 - 15 Jul 2019

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

Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Molecular and quantitative genetics		

Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Phenotypes and traits		Assessment 1 (portfolio) Part A - practical report 1 due Week 3 (Monday 29 July, 5 PM).

Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Animal selection and breeding		Assessment 1 (portfolio) Part A - practical report 2 due Week 4 (Monday 5 August, 5 PM). Assessment 1 (portfolio) Part B - quiz due Week 4 (Friday 9 August, 5 PM). Livestock field trip 1 this week

Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Develop a livestock breeding program		Assessment 2 (development of a breeding program plan) Part A - presentation due Week 5 in class

Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 26 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Crop selection and breeding		Assessment 1 (portfolio) Part C - OH&S report due Week 6 (Friday 30 August, 5 PM). Cropping field trip 1 this week

Week 7 - 02 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Develop, monitor and evaluate a crop breeding program		Cropping field trip 2 this week

Week 8 - 09 Sep 2019

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

Assessment 1 (portfolio) Part A - field trip report 1 (cropping) due Week 8 (Monday 9 September, 5 PM).

Week 9 - 16 Sep 2019

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

Week 10 - 23 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Evaluate a livestock breeding program		Livestock field trip 2 this week

Week 11 - 30 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Genetic resources, germplasm banks, adaptation		Assessment 1 (portfolio) Part A - field trip report 2 (livestock) due Week 11 (Monday 30 September, 5 PM).

Week 12 - 07 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
Social and ethical implications of genetic modification in crops and livestock		

Review/Exam Week - 14 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
		Assessment 2 (development of a breeding program plan) Part B - report due Review week (Monday 14 October, 5 PM).

Term Specific Information

There are compulsory field trips in Weeks 4, 6, 7 and 10.
This unit is also taught by:

- Salena McBride, QATC Senior Instructor (Diploma of Agriculture): E: Salena.McBride@qatc.edu.au T: 07 4982 8722
- Phillip Morris, QATC Senior Instructor (Diploma of Agriculture): E: Phillip.Morris@qatc.edu.au T: 07 4982 8877

Assessment Tasks

1 Breeding Strategy Portfolio

Assessment Type

Portfolio

Task Description

The portfolio comprises of three (3) parts and accounts for 60% of your final mark:

PART A - PRACTICAL REPORTS (40%): During your practicals and field trip sessions, you will be required to complete an activity, short report or presentation related to the practical component. There will be 4 submissions in total, each worth 10% each: practical 1 (Week 2), practical 2 (Week 3), field trip report 1 (cropping; Weeks 6 and 7) and field trip report 2 (livestock; Weeks 4 and 10). A copy of each practical and field trip report is available on Moodle. Attendance is compulsory for practical and field trip sessions and you will not be allowed to complete and submit the assessment if you do not complete the associated practical work.

Due date: By the next Monday 5 PM AEST following the practical. These dates will be Week 3 (Monday 29 July), Week 4 (Monday 5 August), Week 8 (Monday 9 September) and Week 11 (Monday 30 September).

PART B - QUIZ (10%): Assessment of content delivered during lectures, tutorials and pracs from Week 1 through to Week 3. The quiz consists of online multiple choice and short answers questions. You have 2 hours to complete the quiz, two attempts, with the highest mark counted. The quiz will open on Monday 5 August for five days.
Due date: Week 4 (Friday 9 August, 5 PM AEST)

PART C - OH&S REPORT (10%): Write a short report (700-800 words) discussing key safe workplace and environmentally responsible practices that are important in a breeding program. You will be required to watch a short video to assist you in completing your short report.
Due date: Week 6 (Friday 30 August, 5 PM AEST)

Assessment Due Date

PART A: the Monday following the practical/field trip (by 5PM AEST); PART B: Week 4 (Friday 9 August by 5PM AEST); and PART C: Week 6 (Friday 30 August by 5PM AEST)

Return Date to Students

Grades will be returned within 10 working days of submission.

Weighting

60%

Minimum mark or grade

50%

Assessment Criteria

PART A will be based on attendance, participation, completion and submission of practical reports. Attendance and participation for all practical and field trip sessions is compulsory. You will not be allowed to complete and submit the assessment if you do not complete the associated practical work.

PART B will be marked based on correct responses to quiz questions.

PART C will be marked based on the student's ability of identifying and discussing key safe workplace practices.

If students wish to qualify for the QATC Diploma, they will need to obtain at least 50% on every part of the assessment. Resubmissions to QATC can be arranged if 50% is not achieved on the first trial.

Referencing Style

- [Harvard \(author-date\)](#)

Submission

Online

Submission Instructions

PART A: Submission of practical/field trip report uploaded onto Moodle; PART B: Online quiz on Moodle; PART C: Submission of a word doc or pdf uploaded onto Moodle.

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

This assessment, "Development of a breeding program plan," comprises of two (2) parts and accounts for 40% of

your final mark:

PART A - Short presentation (10%):

Due date: Week 5 (in class)

You will be required to give a 3-5 minute presentation describing a selected genetic tool to be applied in a genetic improvement plan for a crop or livestock enterprise. Your presentation should discuss the following aspects:

- Introduce your chosen genetic tool that is relevant to an economically important crop or livestock production industry
- Define the current state of knowledge of the selected genetic tool
- Outline and discuss at least one positive and one negative aspect of the selected genetic tool

PART B - Development of a breeding program plan report (30%):

Due date: Review week (Monday 14 October, 5 PM AEST)

Develop a breeding program plan (livestock or crop) based on sound scientific background and economic returns in the form of a written report. Using the genetic tool you presented on in PART A:

- Evaluate your selected genetic tool
- Define the current state of knowledge of the selected genetic tool
- 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

This assessment will be in the format of an essay (1200-1500 words) and must include an introduction, body, conclusion and references.

The marking rubric will be available on Moodle.

Assessment Due Date

PART A: Week 5 (in class); PART B: Week review week (Monday 14 October by 5PM AEST).

Return Date to Students

Exam Week Friday (25 Oct 2019)

10 working days after due date for each part.

Weighting

40%

Minimum mark or grade

50%

Assessment Criteria

Marks are awarded for:

- Communication and presentation skills
- Introduction and addressing the topic
- Knowledge, content and structure
- Analysis of information
- Identification of appropriate genetic improvement tools
- Discussion of how the breeding strategy will be implemented
- Evaluation of the success of the breeding strategy
- The clarity of English expression, spelling and grammar
- Use of references and accuracy of referencing
- Appropriate timeframe (Part A) and length (Part B)

Detailed marking rubrics will also be available on Moodle.

Referencing Style

- [Harvard \(author-date\)](#)

Submission

Online

Submission Instructions

PART A: You are not required to upload anything to Moodle; PART B: doc., docx. or pdf submitted to Moodle

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