

AGRI 1010 PROTECTED CROPPING CLIMATE CONTROL AND TECHNOLOGY

Credit Points 10

Legacy Code 301263

Coordinator Lihua Li ([https://directory.westernsydney.edu.au/search/name/Lihua Li/](https://directory.westernsydney.edu.au/search/name/Lihua%20Li/))

Description This unit will teach students the intricacies of crop management in a highly controlled growing environment and the interplay between environmental response and plant behavior. In doing so, it will incorporate one nationally recognized unit of competency, "AHCPT503 - Manage a controlled growing environment". Students will also identify controlled environment technologies including those available, under-development and being researched, such as robotics, sensors and gene technologies. Students will gain an appreciation for the science and technology that drives high-tech greenhouse production and apply their skills in Western Sydney University's state of the art National Vegetable and Protected Cropping Centre (NVGCC) and its PRIVA operating system at the Hawkesbury campus.

School Science

Discipline Agricultural Science

Student Contribution Band HECS Band 1 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 1 subject

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Outline plant growth behaviour and measurements of crop performance
2. Explain why and how crops respond to environmental factors
3. Describe the greenhouse technologies available to growers that facilitate environmental control
4. Design a program which will optimise inputs for a specific crop in a controlled environment
5. Simulate the management of a controlled growing environment - (AHCPT503)
6. Report on future prospects and solutions for growing crops in managed environments

Subject Content

1. Understanding plant behaviour
2. Measuring crop performance
3. Crop response to environmental factors
4. Sensor technology
5. Radiation, temperature, coverings and supplemental lighting
6. Heating, cooling and dehumidifying
7. Vertical farm technology
8. Optimising inputs
9. Managing a controlled growing environment (AHCPT503)
10. Gene technology
11. Robotics
12. Identifying future prospects

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/Group Task
Portfolio	1,000 words or equivalent	20	N	Individual
Professional Task	1,500 words or equivalent	30	Y	Individual
Investigative Report	1,000 words or equivalent	30	N	Individual
Final Quiz	1 hour	20	N	Individual

Teaching Periods