Graduate Certificate In Plant Biosecurity (NR45)

**Year offered:** 2011  
**Admissions:** Yes  
**Course duration (part-time):** 2 semesters  
**Domestic Fees (indicative):** 2011: Full fee tuition $14,250 (indicative) per semester  
**International Fees (indicative):** 2011: $15,000 (indicative) per semester  
**Domestic Entry:** February  
**International Entry:** February - (Note: THIS IS AN EXTERNAL COURSE AND IS NOT AVAILABLE TO ONSHORE INTERNATIONAL STUDENTS ON STUDENT VISAS)  
**Total credit points:** 48  
**Standard credit points per part-time semester:** 24  
**Course coordinator:** Associate Professor Anthony Clarke  
**Campus:** External

### Course Design

Biosecurity is a rapidly growing field of national and international importance. Recent high profile pest and disease incursions into Australia, such as equine influenza, citrus canker and red imported fire ant, highlight the threat of exotic organisms to our animal industries, plant industries and native environment respectively. While human and animal health issues often have a higher public profile than plant health issues, this does not mean that plant health issues are any less important. For example, should the exotic wheat disease Karnal bunt ever enter and establish in Australia, it is calculated that it would cost the national economy $1 billion per year and fundamentally change our agricultural export sector.

### Entry Requirements

Applicants must possess a Bachelors Degree, however with significant professional experience in plant biosecurity or a related discipline (eg entomology, plant pathology, quarantine) may enter at the Graduate Certificate level (NR45) and progress from Graduate Certificate to Graduate Diploma (NR55) then to the Masters program. If entering the Master of Plant Biosecurity following initial entry into the Graduate Certificate based on prior professional experience, students will not receive advanced credit for IFN100.

From 2011 this degree will be delivered on a full-time or part-time basis, externally in a full-flexible mode by a consortium of Australian universities. Due to student visa requirements, International students cannot do this course from within Australia.

### Career Outcomes

Graduates will be able to pursue careers in biosecurity, quarantine and pest management, acting in technical, research and administrative roles, with organisations such as the State Departments of Agriculture, State Biosecurity Agencies, AQIS, Biosecurity Australia, Plant Health Australia and private industry, or their international counterparts depending on your nationality.

### Professional Recognition

Graduates will be eligible to apply for membership for non-accredited societies, such as the Australian Entomological Society, the Australian Plant Pathology Society, the Australian Ecological Society, the Australian Institute of Agricultural Science, the Australian Society of Horticultural Sciences and the Australian Society for Risk Analysis.

### Further Information

For further information about this course, please contact:

**Course Coordinator**  
Associate Professor Anthony Clarke  
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### Course Structure - Full Time

**Year 1, Semester 1**

- NRN120 Plant Biosecurity: Detection and Diagnostics  
- NRN150 Plant Biosecurity in Practice

**Year 2, Semester 1**

- Select two units from the following:
  - NRN106 Biosecurity Plant Pests - Invertebrates  
  - NRN107 Biosecurity Plant Pests - Pathogens  
  - NRN108 Biosecurity Plant Pests - Weeds

### Course Structure - Part-time

**Year 1, Semester 1**

- Select TWO units from the following:
  - NRN106 Biosecurity Plant Pests - Invertebrates  
  - NRN107 Biosecurity Plant Pests - Pathogens  
  - NRN108 Biosecurity Plant Pests - Weeds

**Year 2, Semester 1**

- NRN120 Plant Biosecurity: Detection and Diagnostics  
- NRN150 Plant Biosecurity in Practice

### UNIT SYNOPTES
NRN106 BIOSECURITY PLANT PESTS - INVERTEBRATES
It is essential for graduates in plant biosecurity to be familiar with Biosecurity plant pests. This unit investigates invertebrates including their identification, how they function and their host relationships. Because most invertebrate plant pests are insects this course will largely focus on this group, however, other invertebrate plant pests such as the nematodes, snails and mites will also be covered. Invertebrates have quite complex life-cycles, some of which can occur in the absence of the host, so understanding the biology of different groups is essential for appropriate boarder inspection and post-border surveillance. 
Contact hours: Self paced, flexible online delivery 
Campus: Internet

NRN107 BIOSECURITY PLANT PESTS - PATHOGENS
It is essential for graduates in plant biosecurity to be familiar with Biosecurity plant pests. This unit investigates plant pathogens including their identification, how they function and their host relationships. Plant pathogens are found across a range of major biological groupings making their study challenging, but also essential if the pathogen is to properly recognised and the appropriate biosecurity measure applied. Because of their diversity, plant pathogens have a range of different life-cycles, some of which can occur in the absence of the host, so understanding the biology of different groups is essential for appropriate boarder inspection and post-border surveillance. 
Contact hours: Self paced, flexible online delivery 
Campus: Internet

NRN108 BIOSECURITY PLANT PESTS - WEEDS
It is essential for graduates in plant biosecurity to be familiar with Biosecurity plant pests. This unit investigates weeds, including their identification, their biology and ecology and their invasion biology. Weeds are found across all major plant groups making study of their ecology and biology challenging, but also essential if the weed is to be properly recognised and the appropriate biosecurity measure applied. Understanding the biology and ecology of different weed groups is essential for appropriate boarder inspection and post-border surveillance. In event of an incursion management is also required, so this unit will also introduce the basic concepts of eradication and control. 
Contact hours: Self paced, flexible online delivery 
Campus: Internet

NRN120 PLANT BIOSECURITY: DETECTION AND DIAGNOSTICS
Pest detection and diagnostics are cornerstones of biosecurity practice. Without the ability to detect, and then accurately identify biosecurity threats, it would be impossible to effectively erect boundaries against those pests, determine if the pests have crossed boundaries, or ensure our trading partners that we are free of the pests. Detection and diagnostics is not just about identifying a dead insect on a pin, but covers much broader issues such as extensive and intensive field surveys, use of molecular diagnostics tools and management and reporting of large data sets. This unit extends upon the biological knowledge gained in the "Biosecurity Pest" and starts looking at biosecurity practice. 
Contact hours: Self paced, flexible online delivery 
Campus: Internet