Postgraduate Diploma in Science (Biosecurity)

YEAR ONE

• Prerequisite: An approved BSc or equivalent experience subject to approval.

• Requirement: 8 courses (120 points)

• Three prescribed courses (45 points): BIOSCI 747, BIOSCI 748, ENVSCI 733

• Five additional courses, at least three (45 points) of which must be ENVSCI 701 or BIOSCI 761, BIOSCI 724, BIOSCI 730, BIOSCI 751, BIOSCI 735, ENVMGT 742, ENVMGT 743, ENVSCI 716, ENVSCI 734, ENVSCI 737, ENVMGT 746. The remaining 30 points: approved 700 level courses in the Faculty of Science.

BIOSCI 747 (first semester) (15 points)

Biosecurity and Invasion Biology

The science of invasion biology, including stages of the invasion process and ecological interactions between species. The impacts of invasive alien species in different ecosystems. Population and community ecology, in relation to biosecurity.

BIOSCI 748 (second semester) (15 points)

Weed and Pest Management

Techniques for the management of invasive plants and animals (vertebrates and invertebrates) in different ecosystem types, including terrestrial and aquatic ecosystems. Approaches to the prevention, control and eradication of invasive species in different situations.

ENVSCI 733 (first semester) (15 points)

Biodiversity Management and Conservation

The management of species, ecosystems and conservation areas, including potential synergies and conflicts between different uses. Biosecurity and the management of invasive species in a conservation context. Biodiversity management and conservation in terrestrial and aquatic habitats. National and international mechanisms for the sustainable management of natural resources.

Master of Science (Biosecurity) Schedule

YEAR TWO*

• Prerequisite: PGDipSci (Biosecurity) (including BIOSCI 761 or ENVSCI 701)

• Requirement:
  60 points: BIOSEC 796A
  60 points: BIOSEC 796B

*Available from 2009

BIOSEC 796A and B (120 points)

Thesis in Biosecurity

Research project addressing a topic relevant to biosecurity issues. May be overseen jointly by both academic and industry supervisors. Subject to approval from the Programme Director, project can be carried out while employed as a biosecurity practitioner.

The University of Auckland is uniquely placed to offer postgraduate qualifications in biosecurity. It not only has a Centre for Biodiversity and Biosecurity, but also a Marine Laboratory at Leigh, Schools of Biological Sciences, Geology, Geography & Environmental Science and Population Health, and close links with Landcare Research and MAF (Biosecurity New Zealand) at the Tamaki Campus. The University also hosts the international headquarters of the IUCN/SSC Invasive Species Specialist Group.

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Supported by

Biosecurity New Zealand
Manawatu Whenua Landcare Research
Centre for Biodiversity and Biosecurity
Biosecurity
Advanced training for graduates and biosecurity practitioners who wish to learn more about invasion biology and the science behind current biosecurity issues.

Courses
- Biosecurity and invasion biology
- Weed and pest management
- Assessing environmental change and effects
- Entomology and biosecurity
- Advanced plant pathology
- Marine ecology
- Environmental policy and governance
- Research planning and communication
- Aquatic ecological assessment
- Biodiversity management and conservation
- Collaborative conservation and indigenous rights

Enrolment Flexibility
Candidates for entry in the PGDipSci (Biosecurity) must have a BSc or equivalent experience subject to approval. To gain the Postgraduate Diploma in Biosecurity you need to take all three prescribed courses plus five other approved courses. The Diploma is designed to meet the needs of biosecurity practitioners and graduates seeking employment in this field. It consists mainly of intensive modular courses (c. 1-2 weeks formal contact) that can all be taken in one year (as a full time student), or over a longer period (as a part time student).

Goals of the programme
The Postgraduate Diploma in Science and Master of Science in Biosecurity represent new interdisciplinary programmes which aim to give science graduates and biosecurity practitioners the skills to move with confidence in the rapidly growing field of biosecurity. Graduates will be equipped to understand and protect the natural environment (both terrestrial and aquatic) from biosecurity threats. The programmes cover a range of topics including new discoveries in contemporary environmental and life sciences and their translation into tools for prevention and management of invasive species. The programmes will also offer networking opportunities for students to meet practitioners and leaders from the biosecurity sector and related research areas.

Didymo (Didymosphenia geminata) in the Hawea River

The invasive sea squirt, Styela clava or clubbed tunicate.

Invasive heather (Calluna vulgaris) in Tongariro National Park.

The German wasp (Vespula germanica).

Pampas grass (Cortaderia selloana).

Enrolment Opportunities
Potential opportunities for graduates include employment throughout the biosecurity sector in organisations such as MAF (Biosecurity New Zealand), local government, research consultancies, private pest control companies, non-governmental conservation organisations, Department of Conservation, Crown Research Institutes, tertiary education sector.

Didymo (Didymosphenia geminata) in the Hawea River

The Cawthron Institute