MPI APPLIED EPIDEMIOLOGY

TRAINING PROGRAM 2021

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

THE UNIVERSITY OF MELBOURNE

Ministry for Primary Industries
Manatū Ahu Matua





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About the program

The Ministry for Primary Industries' (MPIs') Operational Epidemiology Programme is designed to upskill industry, private practitioners and government officials to better support animal health and biosecurity responses.

The course provides a professional development opportunity for those who need or are keen to grow epidemiological skills and learn how those are applied in an operational context, for example during a response to an emerging animal disease.

The strength of the programme is a diverse mix of participants including government, industry, private practice and international.

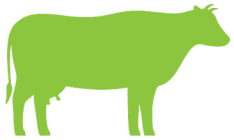
The aims of the program are:

- To support a more effective biosecurity management system and, a more robust response management system.
- To enhance and sustain the depth of New Zealand terrestrial and aquatic animal health epidemiology skills.
- To build and strengthen a trusted professional relationship with partners through cooperation in animal health capability development.

Course Content

The training program comprises of five modules. Content will be delivered by experienced teachers and subject matter experts from Massey University, University of Melbourne and Biosecurity research.

The team will be supported by internationally recognised subject matter experts who will drop in as guest lecturers throughout the course. Another key feature of the course will be the use of real-world examples based on new and emerging diseases such as foot-and-mouth disease, Hendra virus, and African swine fever (ASF).



Module 1 : Introduction to Epidemiology

The focus of this module is on understanding the key principles of epidemiology that are relevant to managing the health of animal populations.

At the completion of this course participants will be able to:

- Describe the frequency of disease using incidence and prevalence.
- Interpret a ratio measure of association
- Describe the main types of observational studies and decide which is most appropriate to answer specific questions.
- Identify the major sources of error and bias in observational studies.
- Interpret the results of diagnostic tests taking into consideration the sensitivity, specificity and underlying prevalence of the disease.

Module 2 :
Introduction to Data Analysis

The focus of this module is on providing participants with an understanding of best practice for data management and giving them the skills necessary to conduct exploratory data analysis in MS Excel.

At the completion of this course participants will be able to:

- List critical variables to be collected during an epidemiological investigation
- Apply best-practice guidelines for data collection & entry and create data files in a format for routine analysis and mapping drawing data from different data sources.
- Describe and summarises categorical, continuous and discrete variables using tables and graphs
- Construct contingency tables and calculate ratio measures of association.

Module 3 :
New and Emerging Animal Diseases

This module focuses on understanding new or emerging diseases at a national level in the context of international trade and biosecurity mitigations.

At the completion of this module participants will be able to:

- Describe the key features of new or emerging diseases, using examples from diseases of national and international significance.
- Describe how international policy and regulations inform the pre-border and border management of new or emerging animal diseases
- Describe how biosecurity measures are applied post border to mitigate or manage new or emerging diseases using surveillance, investigation & response actions
- Identify the key components of farming systems that affect the spread and control of new or emerging diseases.
- Describe the components of a surveillance system that are necessary for the early detection of anew or emerging animal disease.

Module 4 :
Investigating Animal Health

The focus of this module is to provide participants with the skills necessary to plan and execute a simple investigation of a suspect new or emerging disease and be able to support a more complex investigation.

At the completion of this course participants will be able to:

- Describe the steps involved in the investigation of a suspected animal disease outbreak.
- Interpret data from a study that describes the occurrence of disease over time and/or space.
- Assesses the risk posed by a new or emerging animal disease using multiple criteria, including the epidemiological features of the disease and laboratory results.
- Communication key findings and recommendations in plain English so as to be understood by stakeholders and non-techncial decision makers.

Module 5 :
Responding to a Disease Outbreak

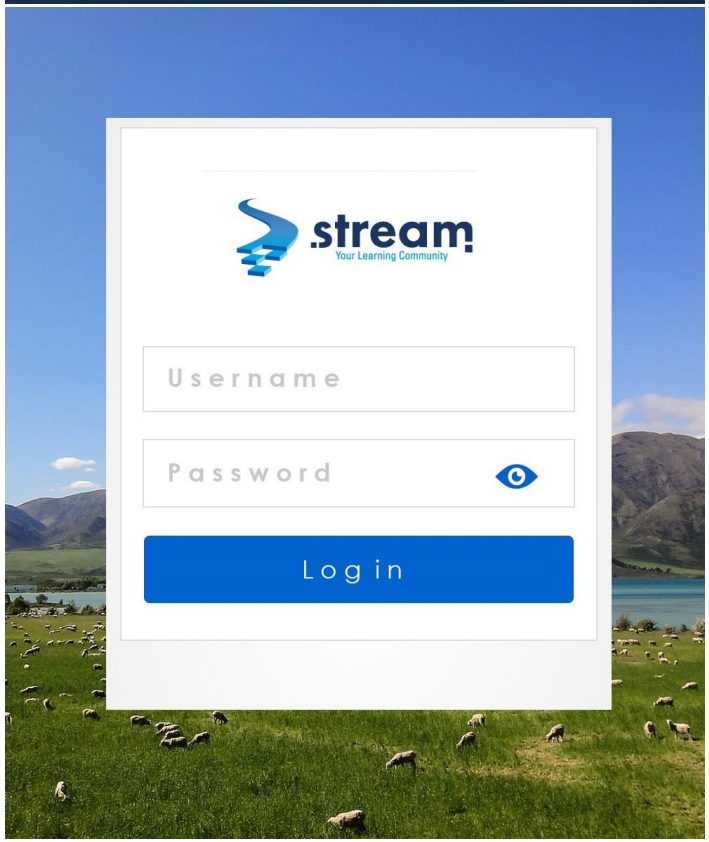
The last module in the course builds on the previous modules. Participants will learn to combine epidemiological information with other information sources to inform decision making around a response to an animal disease. At the completion of the course students will have the skills required to led a simple response and participate in a more complex plan. Speficially they will be able to:

- Explain functions, activities & communication in a response to a new or emerging animal disease
- Describe the necessary components of delimiting surveillance system to a new or emerging animal disease.
- Conduct basic tracing activities to trace animal health data and information back (and forward) to appropriate epidemiological units.
- Identify movement controls and other measures needed for preserving options until a final response decision can be made.
- Sythesesizes information from epidemiololgic investigations and other information sources to prepare a recommendation to eradicate or control a new or emerging disease or standdown a response.
- Communicates key findings and recommendations in plain English so as to be understood by stakeholders and non-techncial decision makers.

Learning format

The course comprises of 25 weeks of online learning and one-week of face-to-face workshops. The online learning will be occur through a dedicated platform that can be accessed from a desktop computer or mobile device. We know that for some people this will be new territory so we will begin with a one week online orientation in which we will help you get set up and familiarise yourself with the learning platform and meet your other participants. Before the start of Module 2 we will provide basic Excel training. The course is optional and for those with some prior experience in MS Excel you will be able to take a test to see if there are specific skills for you to brush up on.

Online learning



At the start of each module students will receive a a study guide. This study guide explains when to read specific texts and outlines the activities to completed. All the readings and activities will be accessible through the learning platform.

The activities have been designed to be interactive as this is when the best learning happens.
Participants can expect to engaging in the following activities :

- Self-paced lessons and scenerios that provide real time feedback
- Discussion forums that will provide and opportunity to unpack concept in small groups with the help of a facilitator.
- Activities that will be completed either independently or as a group.

There will also be webinars and video conference question and answer sessions and we will canvas participants to determine the best time. We think you will enjoy these session but they are 100 percent optional and recordings will be available after.

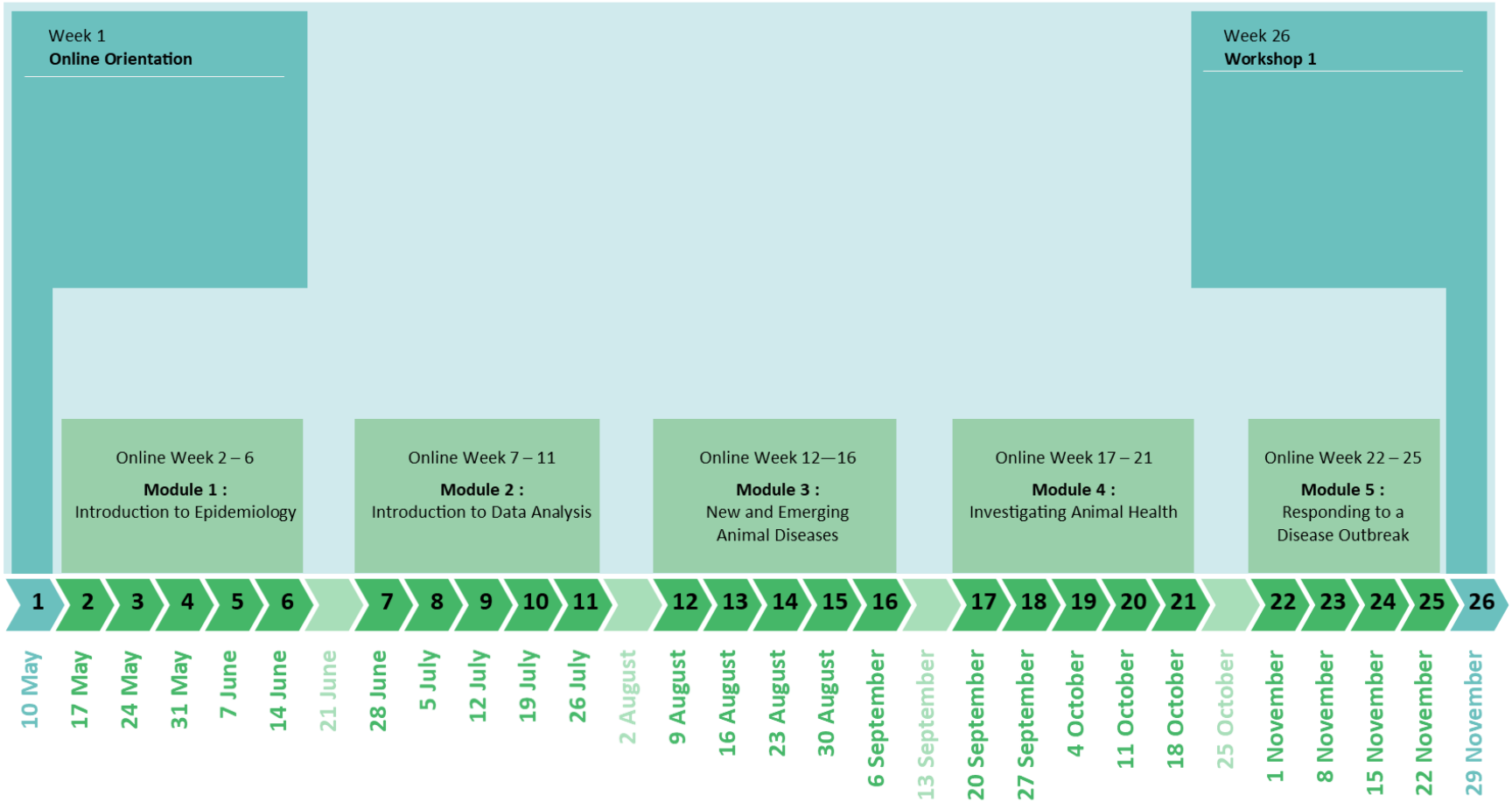
Another of our core beliefs is that feedback is the cornerstone of learning. We will definitely be providing you with feedback. However, you should expect to receive and give feedback to your peers.

Workshop

The training will end with a five-day workshop in Wellington, New Zealand. The teaching will be interactive. We will be calling on different New Zealand based experts providing case studies and sharing experiences. There will also be a simulation exercise to allow participants to apply their skills in investigation and response.

But it won't all be hard work with a evening program available on selected days to allow you to spend time with fellow participants, facilitaors and guest lecturers. We might even get a few Alumni back to join in the fun.

Timetable 2021



Learning Time and Assessment

During the online component, students will need to spend 10 hours per week completing activities. While the required interactions will be asynchronous, that is, participants will not be required to be online at a fixed point in time, students will need to interact with participants to complete activities.

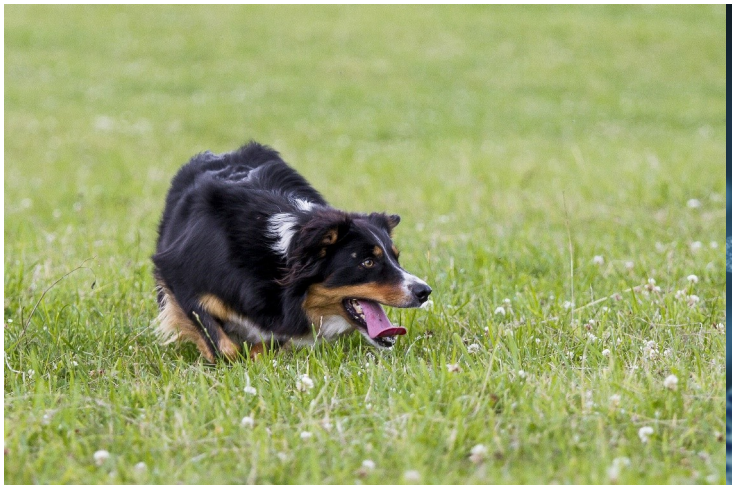
Therefore, participants should plan to log into the online classroom three times a week. Each module will also have some optional synchronous activities such as webinars and question and answer sessions. The timing of these will be decided in consultation with participants.

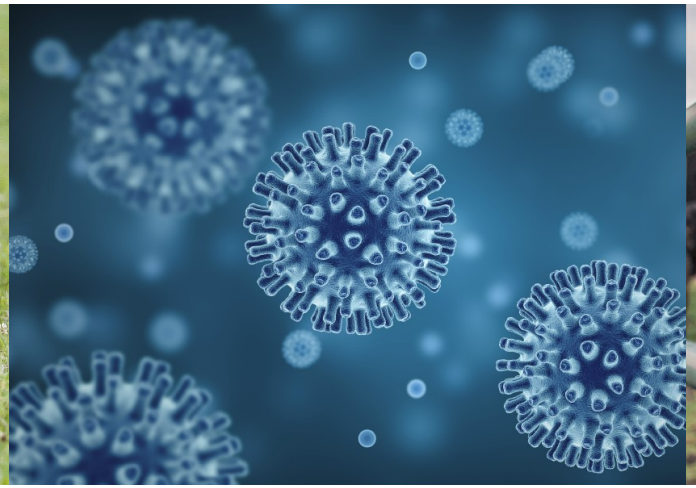
Each module will contain a series of activities that must be completed to demonstrate that the student has met the learning outcomes. Students that meet these requirements for each module will be issued with a Certificate of Completion. Those students who participate in the course but do not complete the activities will be issued with a Certificate of Attendence.

The course will run for 30 weeks with a planned start date in May 2021. Note: The start date may be subject to change.

Expressions of interest can be forwarded to Dr Garry Udy, Ministry for Primary Industries at :

Garry.Udy@mpi.govt.nz





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