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Sustainable Agriculture

Victorian TAFE International has developed a suite of micro-credentials in Sustainable Agriculture.

Sustainable agriculture addresses challenges faced in the production of food and fibre, such as resource scarcity, to build resilience and prosperity in communities.

These resources have a range of applications:

- as a series of stackable and/or standalone non-accredited courses that may be aligned to recognition of learning or credits towards a qualification
- to meet the needs of industry and targeted cohorts (e.g. international offshore industry, clients, or students)
- to include digital badges aligned to recognise learning outcomes and excellence
- can be used across a variety of learning modes from traditional face-to-face learning (master class or workshop), to a blended approach to fully online
- as taster courses and a marketing tool to attract international students to study with Victorian TAFEs.

The Sustainable Agriculture micro-credentials are targeted at prospective international students interested in studying a VET qualification in agriculture related fields; overseas students at partner institutes; overseas teachers of agriculture to complement English for specific purposes or upskill for terminology; and local horticultural workers with no formal qualifications in the field.

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Soil Basics

This micro-credential provides the learner with an understanding of the importance and role of healthy soil for productive agricultural crops. Learners will understand the technical profile, properties, texture and structure of soil. At the end of this micro-credential the learner will understand the make-up of healthy soils for different agricultural crops.

By the end of this micro-credential, the learner should be able to:

- identify horizon layers in soil and description of their composition
- label the three soil properties groups and their contents
- understand the soil texture pyramid and soil particles in soil texture
- explain the two stages of soil structure formation and how they happen
- understand chemical properties of soil and types of organic matter
- describe how soil and water interact
- be familiar with the components of healthy soils for different agricultural crops.

Plant Pests and Diseases

Plant Pests and Diseases introduces learners to the various pests and diseases that can compromise agricultural crops. Various pests, including insects, mites, molluscs and nematodes will be explained in relation to types, the mouthparts of the pest, their life cycle and the damage they can do to plants. You will learn about disease in plants caused by viruses, bacteria and fungi.

By the end of this micro-credential, the learner should be able to:

- identify and classify common plant pests and diseases
- determine a range of control responses
- assess and respond to pests and diseases and the damage caused by them.

Ag Tech – Sensors and Micro-controllers

Achieving greater productivity, efficiency and profitability in the labour-intensive agriculture sector is reliant on new technologies. This micro-credential introduces sensors and micro-controllers with the Internet of Things (IoT) and how these concepts apply to automation in an agricultural context.

By the end of this micro-credential, you should be able to:

- identify the use of IoT in agriculture
- design IoT devices for agriculture solutions
- understand how to connect sensors and controllers used on farms which allow remote access to field data
- use basic programming to connect sensors.

Ag Tech – Automation and Remote Control

Achieving greater productivity, efficiency and profitability in the labour-intensive agriculture sector is reliant on new technologies. This micro-credential introduces automation and remote control with the Internet of Things (IoT) and how these concepts applied to automation in an agricultural context.

By the end of this micro-credential, you should be able to:

- identify how automation can be used in agriculture
- explain the role of actuators in automation
- describe how computing devices and IoT devices communicate
- identify networking protocol standards and control systems
- connect IoT devices to the internet.

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