



Introduction to Drones in Precision Agriculture

Presented by the Department of Plant and Soil Sciences, University of Pretoria

5 ECSA CPD Points

5 SACNASP CPD Points

Securing our future through technology; increasing economic pressures on South Africa's agricultural industry means that people are looking for a way to maximise production, cut costs and improve job security. Rather than being afraid of the changes that technology brings, we need to use it as an extension of our current skillset; merging it with existing abilities and bringing in new visions for our future.

Bridging the divide between technology and livelihoods is critical. We need to make technology useful, and we need to do it in a way that secures both our jobs and our collective future. As resource scarcity and demand begin to create pressure points in some of South Africa's biggest economic sectors, the use of technology becomes more and more critical.

The **Introduction to Drones in Precision Agriculture** course is an industry-specific short course, focused on the application of drone technology in precision agriculture. During the course, the practical on-the-ground training of DSL will be combined with theoretical knowledge of the University of Pretoria to apply drones and image processing to produce information that enhances profitability and sustainability in agriculture. You will be exposed to the application of multi-spectral sensors and various processing techniques to study trends in plant health and field conditions over large areas, and enable high-quality data-driven precision agriculture that improves profitability. Using drones for flowering and yield estimations as well as hail or frost damage assessments will be explored. Many applications are also relevant to environmental studies, such as the identification of invasive plant species and monitoring vegetation restoration efforts.

The practical experience combined with the University of Pretoria's academic excellence in these sectors, will provide delegates with a holistic course from theory through to practice.

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Shifting knowledge to insight



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Course content

- The use of drones in a precision agriculture environment: Costs vs Benefits
- Flight and sensor planning for agricultural mapping
 - Intro to multi-spectral flight data
- Designing a drone workflow for use in precision agriculture
 - Pre- and post-harvest acquisition
- Using NDVI and RGB data to make basic data analysis and decisions
- Basic hardware maintenance and care procedures.

Learning outcomes

After successfully completing this course, you will

- have an understanding of precision agriculture
- be able to apply imagery to determine plant health (phenotyping)
- be able to apply the use of drones in advanced crop management and decision-making
- be able to apply the use of drones for early detection and management of pests and diseases
- be able to use ground truthing to validate and improve information collected by drones
- have received exposure to applications in environmental management beyond agriculture.

*Delegates are required to bring their own laptops to the training.

Course duration

5 Contact Days
Monday – Friday 08:00 – 16:30

Course fees

R13 000.00 (VAT Inclusive) per delegate

Course fees must be paid in full 14 days prior to course start date. Proof of payment can be submitted to enrolments@enterprises.up.ac.za

Who should enrol?

This course is ideal for:

- professionals in the agricultural space and would like to integrate technology into their current systems;
- students studying agriculture, or
- anyone who wishes to get a drone license with a practical element.

Assessment and certification

Delegates will be assessed through online assessments, written exams and on-field practical assessment. Successful delegates will be issued a University of Pretoria certificate.

Accreditation and certification

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Registration and enquiries

Client Information Centre

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