

## **Drones for Agriculture: Prepare and Design Your Drone (UAV) Mission**

Course code **INF-52303**

Period **1, 2, 3, 4, 5, 6**

Contact Person **Dr. João Valente (joao.valente@wur.nl)**

Lecturers **Dr. João Valente (INF) and Lammert Kooistra (GRS)**

Examiners **Dr. João Valente (INF) and Lammert Kooistra (GRS)**

Language of instruction **English**

Assumed prerequisite knowledge **None**

Secretariat **office.inf@wur.nl**

### **Profile of the course**

We are all getting familiar with the image of a drone in the sky. Although flying a drone is fun, drones are not only toys. More and more drones or Unmanned Aerial Vehicles (UAV) are used by governments and companies to gain answers and insights on applications for nature, agricultural and metropolitan challenges. For example, small Drones/UAVs are employed in agriculture for crop observation, crop monitoring, field analysis and map generation through aerial surveys. And with the available software and 'mission planning tools' market growing, so is the demand for knowledge and understanding about their usage and limitations.

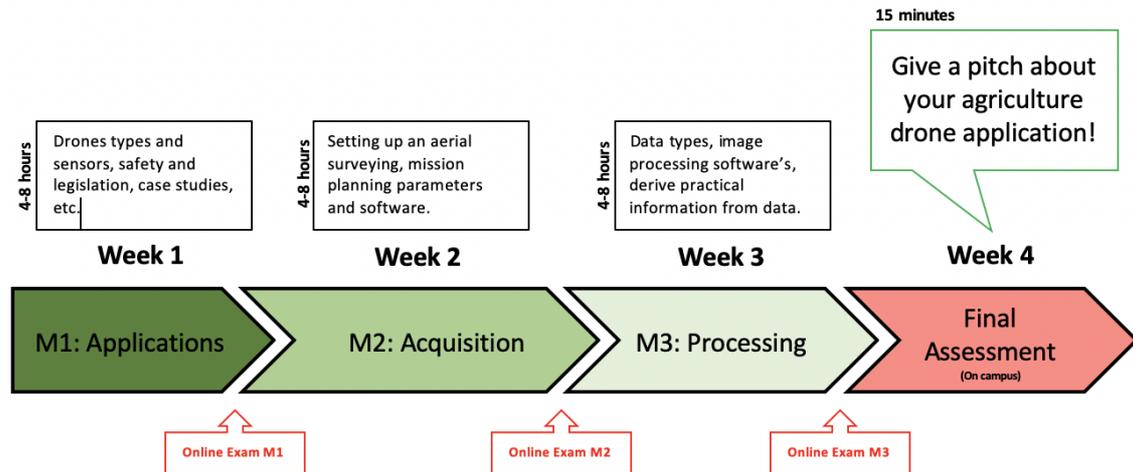
Over three weeks you will learn whether it makes sense to use drones for your application, challenge or research question. You will learn how to plan an end-to-end mission (from image acquisition to data visualization) for your specific drone application and how to execute a drone mission safely. After finishing this online course, you will have gained full understanding of the aerial mapping workflow and how to implement it in a programmable small drone. You will know which steps you need to take to gain the valuable insights you are looking for.

In order to attend this course, you should first enrol in the MOOC Drones for Agriculture: Prepare and Design Your Drone (UAV) Mission:

<https://www.edx.org/course/drones-for-agriculture-prepare-and-design-your-dro>

### **Planning**

The course planning is depicted below.



### Learning outcomes

After successful completion of this course students are expected to be able to:

1. Identify whether it makes sense to use a drone for your application or challenge.
2. Give examples about the available airborne technology.
3. Give an overview what international legislation and regulations are concerning drones.
4. Perform the required flight preparations and create- and execute a safe mission setup.
5. Define a mission planning with the available open source and commercial tools.
6. Discuss the potential of image product delivery for different purposes.
7. Examine drone data and derive information from it.

### Learning materials and resources

All the learning material and resources can be found while attending the MOOC Drones for Agriculture: Prepare and Design Your Drone (UAV) Mission.

### Educational activities and work forms

Knowledge clips, links to websites, glue text, self-study, participate in the course forum, Computer practical with open-source software and drone data, assignments, exams and final presentation.

### Assessment strategy

Online course progress (mandatory to complete the online course) and a presentation covering the topics addressed.

Final mark = 60% Online course progress + 40% Presentation