MSc Digital Technology for Sustainable Agriculture
One Year Full Time (September start)

Digital Technology for Sustainable Agriculture is the integration of new and advanced technologies into crop and livestock farming systems to enable farmers and other professionals in the sector to improve food production.
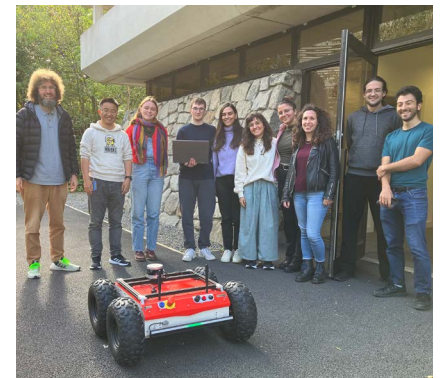
UCD's MSc Programme on Digital Technology for Sustainable Agriculture is targeted towards providing students with cutting edge training in digital technology areas that include a number of modules in **computer programming, data processing, Internet-of-Things and machine learning implementations**.

This programme will build student's knowledge and skills-base to address the complexities of developing, **deploying and managing digital technology** in the agri-food sector with a focus on enhancing efficiency, sustainability and resilience at all levels of food production.

The programme also offers hands-on experience on a range of novel digital technology, training in state-of-the-art labs and applied research in a real life environment at the Lyons Research Farm.

Course Content and Structure

- Computer Programming
- Computers and Electronics in Agriculture
- Numerical Methods for Agriculture
- IoT enabled Agrifood Production
- Sensors and Sensing Systems
- Remote Sensing and GIS for Decision Making
- Hyperspectral Imaging
- Soil Technology
- Optical Sensing Technology
- Crop Technology
- Precision Agriculture
- Precision Livestock Management

All modules will be delivered mainly face-to-face including blended (i.e., online lectures and assignments supported by occasional face-to-face tutorials), and intensive (i.e., one or two week full-time) formats. Students will be able to take themed clusters of modules (e.g. three modules of precision farming, three modules of sensing technology, three modules of computers and electronics, three modules of data science) to reflect specific technical interests or needs for upskilling.

Research Project: Students will undertake an applied, work related, research project in the summer trimester.

For those who wish to take individual modules, but not the course, please contact the ADVANCE Centre info@advancecentre.ie

Why study at UCD?

Tradition
Established 1854, with 160 years of teaching & research excellence

Global profile
UCD is ranked in the top 1% of higher education institutions worldwide

Global community
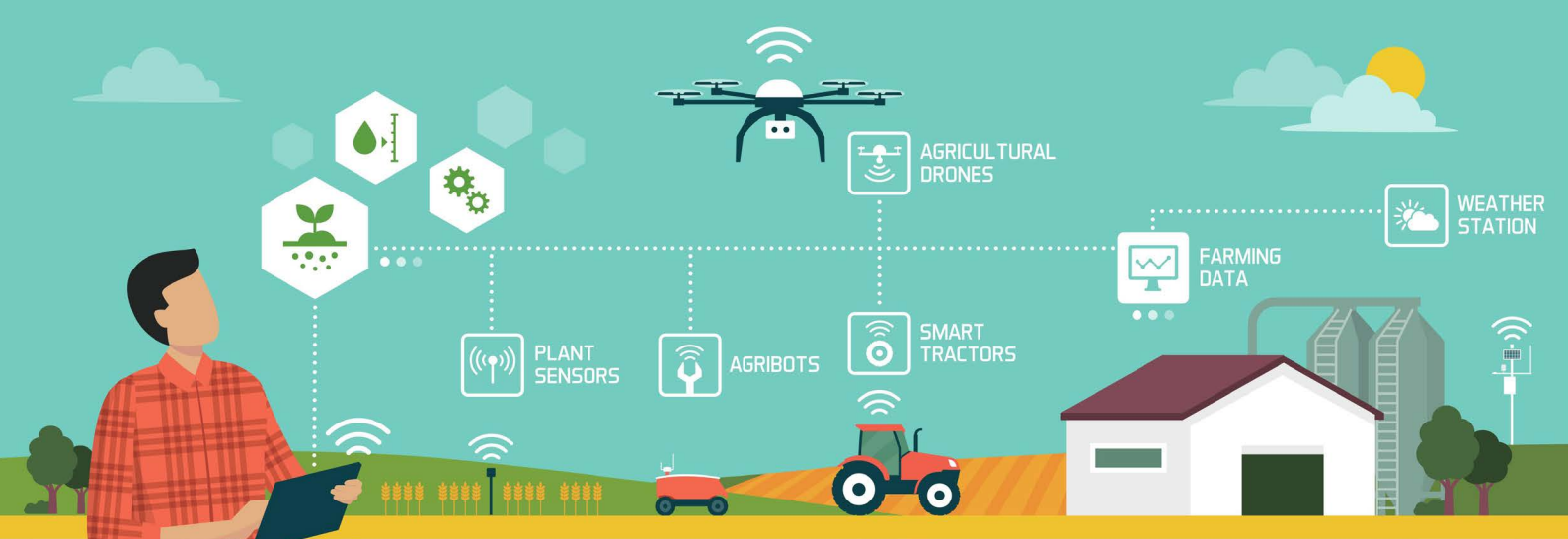Over 6,000 international students from over 120 countries study at UCD

Global careers
Degrees with high employability; dedicated careers support; 1 year stay-back visa

Digital Tech Lab for Agri-Food

Students will avail of Ireland's 1st Digital Tech lab for Agri-Food, recently established by the Programme Director Dr Dimitrios Argyropoulos within the UCD School of Biosystems and Food Engineering to deliver cutting edge research on a suite of Digital Technologies applied to the Agri-Food value chain. This lab will provide students with hands-on training on autonomous mobile robots, smart sensors, IoT, drones and machine learning.

Skill set students will acquire:

The MSc programme provides students with an understanding of the "Digital Technology" tools that digitise data capture relating to the environment and activity (sensors circuits, systems and programming), move the data (accumulation networks), store the data (databases), analyse data to gain insights (models and AI), share the resulting information along the agricultural value chain (distribution networks) and provide actors and stakeholders access to the digital chain (interfaces).

Advance Centre

Career Opportunities

Graduates of the MSc Digital Agriculture may find employment opportunities in the following areas:

- Agricultural machinery (e.g. Agco, CNH Industrial, Claas, John Deere)
- Precision farming (e.g. Amazone, Lemken, Rauch, Dairymaster)
- Decision support in agriculture (e.g. Corteva Digital Ag, Syngenta Global)
- IoT, data and predictive analytics (e.g. BASF, Bosch, IBM, Microsoft).

International Fees & Scholarships

Tuition fee information is available on www.ucd.ie/fees. Please note that UCD offers a number of graduate scholarships for full-time, self-funding international students, holding an offer of a place on a UCD masters programme. Please see www.ucd.ie/international/scholarships for further information.

Learn More

Programme Director

Dr Dimitrios Argyropoulos

The programme is delivered by a highly re-search-intensive and multi disciplinary school – Ireland's premier agri-food related research entity. The Programme Director has won numerous prestigious research and innovation awards from the European Commission on sustainable and digitized agri-food value chains

Applicant Profile

- Applicants must hold a bachelor's degree with a minimum upper second-class honours (NFQ level 8)or international equivalent in agriculture, biological science, physical science, environmental related, engineering, computer science or other appropriate discipline. Where an applicant has no formal qualification encompassing agriculture/biology, practical knowledge of, and experience in, agriculture will be required.

- Applicants whose first language is not English must also demonstrate English language proficiency of IELTS 6.5 (no band less than 6.0 in each element), or equivalent.

Related Programmes

- MSc Environmental Technology
- MSc Sustainable Energy & Green Technologies