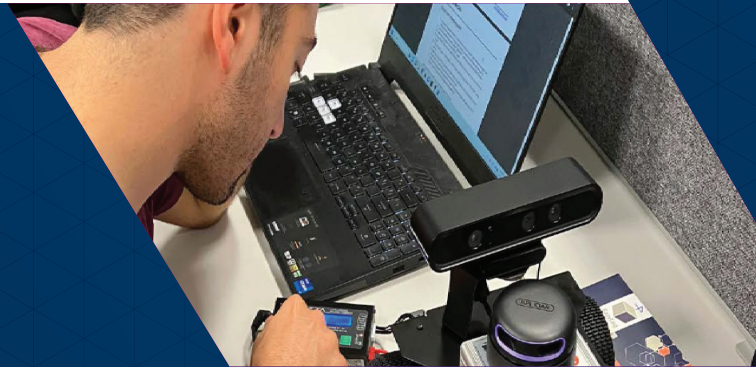


# MSc Digital Technology for Sustainable Agriculture

## One Year Full Time (September start)



## Introduction

**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.

## 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.

## Course Content and Structure

- **90 total credit** taught master's
- **60 credits** taught modules
- **30 credits** Thesis (Students will undertake an applied work related, research project in the Summer trimester)

**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).

### Modules include:

- Sensors and Sensing Systems
- Hyperspectral imaging
- Computers & Electronics in Agriculture
- Remote Sensing and GIS
- Advances in Crop Mechanisation
- Data Prog with Python (online)
- Precision Agriculture
- Numerical Methods for Agriculture
- Precision Livestock Management
- Optical Spectroscopy
- Soil Technology
- IoT and cloud platforms in AgriFood Production

## Why study at UCD?



### Tradition

Established 1854, with over 170 years of teaching & research excellence



### Employability

UCD is ranked in the top 100 worldwide at 88th globally for employability outcomes for graduating students.



### Global profile

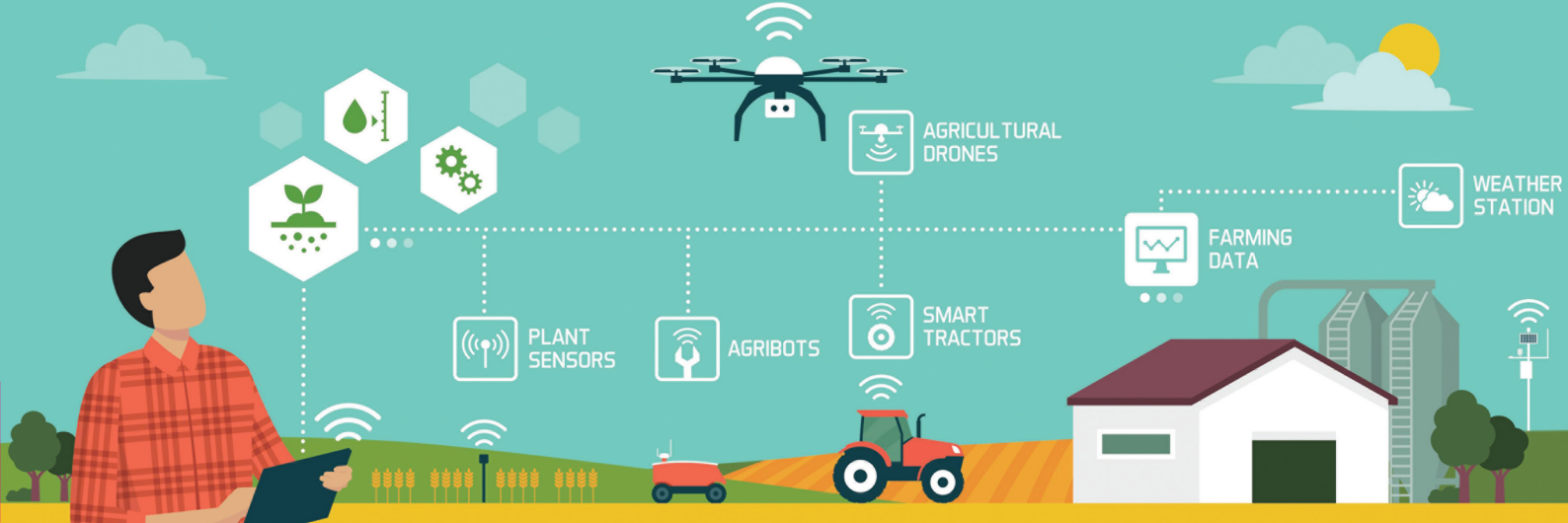
UCD is ranked in the top 1% of higher education institutions worldwide



### Global careers

Dedicated careers support; 2-year stayback visa to work in Ireland



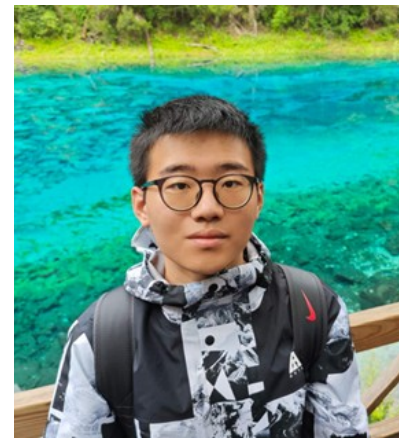


## Career Opportunities

Ireland is home to the world's top 10 technology companies. It is known as the IT Capital of Europe and is among the world's most technologically developed nations. There are excellent job opportunities, with 5,000 job vacancies in the sector at present. Big Tech companies have recently, to a greater or lesser extent, entered farming and food industries. In addition, a dynamic transformation is taking place in the world of agriculture, triggered by the rapid emergence and growth of AgTech startups. This highlights the immense career possibilities and promising future for our graduates in the areas of precision farming, decision support in agriculture, IoT, smart sensors, intelligent algorithms, data, and predictive analytics.

## Graduate Profile

Boyuan Chen



## Entry Requirements

- 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. Career Opportunities. Tuition fee information is available on [www.ucd.ie/fees](http://www.ucd.ie/fees).

### International Fees and Scholarships

Tuition fee information is available on [www.ucd.ie/fees](http://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/global/scholarships/](http://www.ucd.ie/global/scholarships/) for further information.

### Related Master's Programmes of Interest

- MSc Environmental Technology
- MSc Sustainable Energy & Green Technologies

"This programme provides comprehensive knowledge of the principles and applications of advanced technologies in the agricultural sector, helping me to build a multidisciplinary foundation to address challenges in the agri-food industry. Through modules in programming, data processing, sensors, and IoT applications, I not only enhanced my technical skills but also deepened my understanding of how to improve sustainability and efficiency in food production. The digital tools used in teaching were also impressive. With my background in data science, this experience has equipped me to bridge information technology and agricultural practice, which is valuable for my career development. For those seeking to study in this cross-disciplinary field, this programme is a great choice."

### CONTACT US

**Website:** [www.ucd.ie/eacollege/contact/](http://www.ucd.ie/eacollege/contact/) or [www.ucd.ie/global/enquire/](http://www.ucd.ie/global/enquire/)  
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**International Students** – **E:** [eamarketing@ucd.ie](mailto:eamarketing@ucd.ie) **T:** +353 1 7161802

### APPLY NOW

This programme receives significant interest so please apply early online at [www.ucd.ie/apply](http://www.ucd.ie/apply)