



University College Dublin  
Ireland's Global University



## MSc/Professional Diploma Data Analytics (3 Years/9 Months Part Time) (Online)

The MSc and Professional Diploma in Data Analytics from the UCD School of Mathematics and Statistics will help you to analyse and understand the large data sets that are being created via the huge growth in online information. The value of these data sets is being increasingly recognised in business circles, with many companies seeking to recruit individuals with skills in data analytics to extract the valuable insights contained therein. Data Analytics is at the crossroads between statistics and computer science, and our courses contain elements of both. We will give you the tools

to apply advanced skills from these fields to maximum effect in any work-related, "big data", environment. There are no lectures to attend as the courses are delivered completely online. Students will be given videos, demonstrations, and interactive games to enhance their learning, with regular feedback and interaction with lecturers. This provides flexibility to students who can learn wherever and whenever they like, as well as at a pace that suits them. Students will attend a UCD exam centre at the end of each semester for exams.

## 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

### Key Fact

The UCD School of Mathematics and Statistics has a strong research track record through its interdisciplinary approach to research, with academics involved in the UCD Institute for Discovery. Members of the School are also heavily involved in Insight: the National Centre for Data Analytics, which was created in 2013 with a combined €88m of Government and industry funding.

## Course Content and Structure

**90 credits**

taught masters (online) – all taught modules

**20 credits**

professional diploma (online) – all taught modules

This first year of both programmes is designed to introduce you to statistical and mathematical concepts in Data Analytics and Data Mining, and to start you on statistical programming with data. The second year of the MSc is split between understanding the theory behind statistical models for data via predictive analytics, and dealing with data sets at scale using multivariate techniques. The final year of the MSc covers some advanced statistical modelling methods. A provisional list of topics is as follows:

### Statistics modules:

Data Mining  
Predictive Analytics  
Multivariate Analysis  
Time Series Analysis  
Stochastic models  
Bayesian Analysis

### Computing modules:

Monte Carlo  
R  
C  
Java  
Python  
SAS



Modules and topics shown are subject to change and are not guaranteed by UCD.

## Career Opportunities

Data Analysts are in strong demand from industry; those who are successful in completing the course are highly employable in fields as diverse as pharmaceuticals, finance and insurance, as well as cloud computing. Prospective employers include any company that requires detailed, robust analysis of data sets. Some examples include:

- ICT companies (e.g., Google, eBay, Facebook, Amazon, Paddy Power)
- The pharmaceutical industry (e.g., Janssen, Merck, GSK)
- The financial services industry (e.g., Bank of Ireland, AXA, EY, Accenture, Deloitte)



## Apply Now

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

## Entry Requirements

- This programme is intended for applicants with a degree in a numerate subject. An upper second class honours or international equivalent is required.
- Those without this requirement, but with equivalent experience in industry, will also be considered on a case-by-case basis, or can apply for the Professional Certificate in Mathematics for Data Analytics and Statistics which leads directly into the Data Analytics programme.
- 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.

## Staff Profile

### Associate Professor Andrew Parnell, UCD School of Mathematics and Statistics



I am a Chartered Statistician and Lecturer with over 10 years' experience. I enjoy working with big, messy data sets,

which have hidden relationships that only statistical methods can uncover. My main expertise is in:

- Feature/variable selection
- Multivariate analysis

- Stochastic processes and time series analysis
- Bayesian inference
- Spatial and spatio-temporal modelling
- Computational statistics

I have applied such methods in a diverse range of fields including:

- Climate change (estimating past changes in climate from pollen, estimating changes in extreme for Ireland's future, estimating worldwide rates of sea level change)

- Proteomics (finding biomarkers for prostate cancer)
- Veterinary Science (estimating the factors contributing to elite racehorse ability)
- Archaeology (radiocarbon dating and age-depth model building)
- Ecology (stable isotope mixing models to estimate animal diets, monitoring fisheries discard rates in the Irish Sea)

## EU Enquiries

Programme Administrator

✉: [DataAnalyticsOnline@ucd.ie](mailto:DataAnalyticsOnline@ucd.ie) ☎ +353 1 716 2452

[www.ucd.ie/courses/msc-data-analytics](http://www.ucd.ie/courses/msc-data-analytics)

UCD School of Mathematics and Statistics, University College Dublin, Belfield, Dublin 4.

**Non-EU Enquiries** ✉: [internationaladmissions@ucd.ie](mailto:internationaladmissions@ucd.ie)  
[www.ucd.ie/international](http://www.ucd.ie/international)

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## Fees

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

## Related Masters Programmes of Interest

- MSc Data & Computational Science
- MSc Mathematical Science
- MSc Statistics