SPATIO-TEMPORAL ANALYTICS AND BIG DATA MINING MSc / 2017/18 ENTRY

www.ucl.ac.uk/graduate/cege
With the rapid development of smart sensors, smartphones and social media, "big" data is ubiquitous. This new MSc teaches the foundations of GIScience, database, spatial analysis, data mining and analytics to equip professionals with the tools and techniques to analyse, represent and model large and complex spatio-temporal datasets.

### Degree summary

Students will be equipped with computational foundations and skills needed for big data analytics including visualisation, prediction, clustering and simulation with statistical and machine learning approaches, as well as retrieving and mining big (open) data, web services and cloud computing, web and mobile applications, by practising with real case data and open software.

- As one of the world's top universities, UCL excels across the physical and engineering sciences, social sciences and humanities.
- Spanning two UCL faculties, this interdisciplinary programme exploits the complementary research interests and teaching programmes of three departments (Civil, Environmental & Geomatic Engineering, Computer Science, and Geography).
- Students on the Spatio-Temporal Analytics and Big Data Mining programme will be part of a vibrant, enthusiastic, and international research environment in which collaboration and free-ranging debate are strongly encouraged. This is supported by weekly research seminars and industrial seminars from top employers in the field.

The programme is delivered through a combination of lectures, seminars, and laboratory practicals. Assessment is through examination, coursework, practicals, dissertation, and poster presentation.

### Degree structure

**Mode:** Full-time: 1 year  
**Location:** London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of four core modules (60 credits), four optional modules (60 credits) and a dissertation/report (60 credits).

A Postgraduate Diploma, four core modules (60 credits), two optional modules (60 credits), full-time nine months is offered.

#### Core Modules

- GIS Principles and Technology
- Principles of Spatial Analysis
- Spatial Databases and Data Management
- Spatio-temporal Analysis and Data Mining

#### Choose four options from the following:

- Introductory Programming (requires Applied Machine Learning option)
- Complex Networks and Web
- Representation, Structures and Algorithms
- Mapping Science
- Supervised Learning (requires Applied Machine Learning)
- Web Mobile GIS
- Information Retrieval & Data Mining (requires Introductory Programming)
- Geographic Information System Design
- Applied Machine Learning (requires Introductory Programming, and Supervised Learning)

#### Dissertation/Report

- All students undertake an independent research project which culminates in a dissertation of 15,000 words.
Your career

Graduates from this programme are expected to find positions in consultancy, local government, public industry, and the information supply industry, as well as in continued research. Possible career paths could include: data scientist in the social media, finance, health, telecoms, retail or construction and planning industries; developer of spatial tools and specialised spatial software; researcher or entrepreneur.

Employability

Graduates will be equipped with essential principles and technical skills in managing, modelling, spatial and spatial-temporal analysis, visualising and simulating "big" spatio-temporal data, with emphasis on real development skills including: Java, JavaScript, Python and R. Business Intelligence (BI) skills will also be taught via practical case studies and close collaborations with leading industrial companies and institutions. All these skills are highly valued in big data analysis.
Entry requirements

A minimum of an upper second-class UK Bachelor’s degree in a relevant discipline (such as engineering, mathematics, computer science, environmental science, human or physical geography, geology, forestry, oceanography, or physics) or an overseas qualification of an equivalent standard. Applicants with relevant professional experience are also considered.

English language proficiency level

If your education has not been conducted in the English language, you will be expected to demonstrate evidence of an adequate level of English proficiency.

The level of English language proficiency for this programme is: Standard.

Information about the evidence required, acceptable qualifications and test providers is provided at: www.ucl.ac.uk/graduate/english-requirements

Your application

Students are advised to apply as early as possible due to competition for places. Those applying for scholarship funding (particularly overseas applicants) should take note of application deadlines.

When we assess your application we would like to learn:

// why you want to study Spatio-temporal Analytics and Big Data Mining at graduate level
// why you want to study Spatio-temporal Analytics and Big Data Mining at UCL
// what particularly attracts you to this programme
// how your personal, academic and professional background meets the demands of a challenging academic environment
// where you would like to go professionally with your degree

Together with essential academic requirements, the personal statement is your opportunity to illustrate whether your reasons for applying to this programme match what the programme will deliver.

FEES AND FUNDING 2017/18 ENTRY

// UK: £11,800 (FT)
// EU: £11,800 (FT)
// Overseas: £24,610 (FT)

The tuition fees shown are for the year indicated above. Fees for subsequent years may increase or otherwise vary. Further information on fee status, fee increases and the fee schedule can be viewed on the UCL Current Students website.

Full details of funding opportunities can be found on the UCL Scholarships website: www.ucl.ac.uk/scholarships

APPLICATION DEADLINE

All applicants: 28 July 2017

Details on how to apply are available on the website at: www.ucl.ac.uk/graduate/apply

CONTACT

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EU referendum

For up-to-date information relating to specific key questions following the UK’s decision to leave the EU, please refer to www.ucl.ac.uk/eu-referendum

PDF Updated: November 24, 2016

This information is for guidance only. It should not be construed as advice nor relied upon and does not form part of any contract. For more information on UCL’s degree programmes please see the UCL Graduate Prospectus at www.ucl.ac.uk/graduate