

LONDON'S GLOBAL UNIVERSITY



UCL

## MSc Remote Sensing

The leading degree for  
remote sensing specialists

[www.geog.ucl.ac.uk/remotesensing](http://www.geog.ucl.ac.uk/remotesensing)



# Remote Sensing at UCL

**The MSc Remote Sensing is the leading Master's level programme in remote sensing in the UK. Although based at UCL, the programme draws expertise and teaching from across many parts of the University of London. It provides students with the opportunity to study at an advanced level the ways in which remote sensing instruments in space and on aircraft may be used to collect environmental information about the Earth. The MSc Remote Sensing is integrated with the UCL Geography MSc programmes, providing additional flexibility in the course options.**

Distinctive features of the programme include its intercollegiate nature, which exposes students to a range of university departments and expertise across fields from monitoring and modelling vegetation and carbon stocks, sea ice, climate and the cryosphere, solid earth and geology, fire impacts, photogrammetry and metrology, new sensor technology, and ocean processes.

The course provides an ideal foundation for PhD research, or for employment in a wide range of industries, NGOs, government agencies and environmental consultancies.



*ASTER image of Patagonian glacier, 2/5/2000, NASA*

As one of the world's top universities, UCL excels across the physical and natural sciences, social sciences and humanities. The MSc is run by UCL Geography, which enjoys an outstanding international reputation for its research and teaching. The MSc in Remote Sensing is designed to appeal to students from a range of disciplines looking to understand the role that remote sensing can play in understanding the environment. It will appeal not only to those with backgrounds in environmental sciences, but to those from physics, engineering etc. who wish to exploit their skills in an environmental science context. The programme also caters for those who have been in employment and wish to change career.

## Programme structure

All students take four core Remote Sensing modules in the first term and choose a further four modules from a range of options in the second term. Additionally, students undertake a piece of original research leading to a dissertation of up to 15,000 words with the support of an academic supervisor.

### 1<sup>st</sup> term (60 credits)

#### **Core module: Principles and Practice of Remote Sensing**

Introduces key theoretical concepts in geometric and radiometric principles including: mapping foundations, reference and projection systems, data acquisition, the electromagnetic spectrum from optical to microwave, interactions with the surface and atmosphere, orbits, sensors and applications.

#### **Core module: Image Processing and GIS**

Introduces essential mathematical theory and practical techniques for image processing and geographic information systems (GIS) in order to enhance, classify, extract and analyse thematic information for a range of applications.

#### **Core module: Analytical and Numerical Methods**

Introduces a range of analytical, numerical and statistical principles and techniques for processing data, extracting information, modelling and analysis. The course provides core skills including matrix algebra, basic calculus, errors and error propagation, statistical testing, linear and non-linear parameter estimation, ODEs, optimisation, Bayesian parameter estimation, Monte Carlo techniques.

#### **Core module: Scientific Computing**

Introduces students to the particular requirements of scientific as opposed to more general-purpose computing. Key programming methods are taught within a UNIX environment and using industry-standard numerical processing packages such as IDL and Matlab.

### 2<sup>nd</sup> term (60 credits)

Options may include: Coastal Change, Environmental Geoscience, Environmental GIS, Global Monitoring for Environment and Security, Image Understanding, Mapping Science, Ocean & Coastal Zone Management, Research Methods, Surface Water Modelling, Terrestrial Carbon: Modelling & Monitoring, Terrestrial Data Acquisition, Topographic Mapping, Wetlands.

### 3<sup>rd</sup> term (60 credits)

Dissertation (15,000 words)

## Programme Information

The programme is taken full-time over one year or part-time.

### Entry requirements

Potential applicants are expected to have a first or upper second-class Honours degree in a relevant discipline (e.g. oceanography, civil engineering, geography, geology, forestry, mathematics, physics) from a UK university or equivalent from an overseas institution. Applicants with relevant professional experience will also be considered.

### Funding

For funding details, please visit [www.ucl.ac.uk/scholarships](http://www.ucl.ac.uk/scholarships)

### How to apply

Contact the Graduate Admissions Assistant ([masters@geog.ucl.ac.uk](mailto:masters@geog.ucl.ac.uk)) to request a Graduate Application Pack.

Application materials may also be downloaded at [www.ucl.ac.uk/admission/graduate-study/application-admission/](http://www.ucl.ac.uk/admission/graduate-study/application-admission/)

### Further information

Academic enquiries:  
[remotesensing@geog.ucl.ac.uk](mailto:remotesensing@geog.ucl.ac.uk)

General information  
[www.geog.ucl.ac.uk/remotesensing](http://www.geog.ucl.ac.uk/remotesensing)



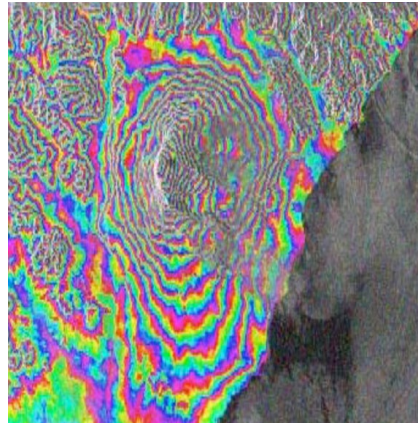
University of London

**Imperial College**  
London

**KING'S**  
College  
LONDON

#### DISCLAIMER

The information in this leaflet is correct at the time of going to press, but no guarantee can be given that it will not be amended before, or during, the graduate programme to which it refers.



RADAR interferogram, Etna, Sicily, 1/8/1995, ESA

### Lecturing staff include

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Marek Ziebart



Aerial photograph of Savanna fire, Kruger National Park, SA. (Mat Disney)