

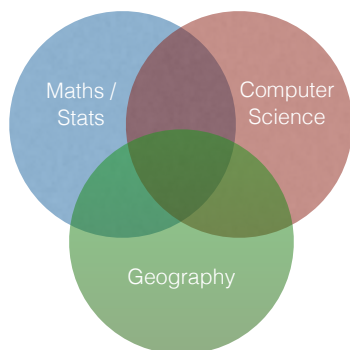
MSC GEOGRAPHIC DATA SCIENCE

Geographic Data Science Laboratory Department of Geography and Planning

www.geographicdatascience.com

Geographic Data Science

Human activities are increasingly associated with the generation of large volumes of data. Geolocated attributes are assembled through a variety of mechanisms including: transactional data collated by retailers, administrative data assembled to help with the efficient running of public services, data shadows created from social media use, or an increased prevalence of smart-



card linked transport networks. Further ambient data are collected through sensor networks, recording numerous attributes such as traffic volume, pedestrian flow or air quality.

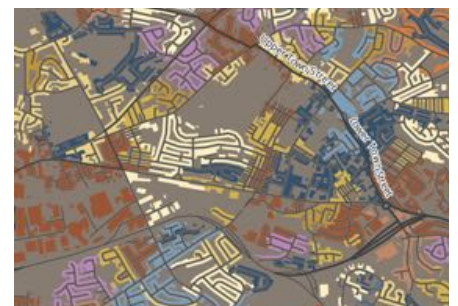
Many grand human challenges concern problems of a geographical nature; be this how we can mitigate the human impact of climate change; ensure global food and water security; design energy systems that are resilient within the context of future population dynamics; or, how spatial inequities in health and wellbeing could be eradicated? The growing volume of big data about the form, function and dynamics of human activities and their contexts are providing new opportunities to advance these debates.

About the programme

This programme aims to develop a high level understanding of quantitative and computational geographical methods.

These will include skills in GIS software, the R programming language and Python. In particular, emphasis will be placed on developing skills in the visualisation, modelling and statistical analysis of spatial data using web-based and traditional techniques, and how these may be used in a number of application areas.

To support this, the degree seeks to help students develop a wide range of skills including critical analysis (oral, textual, visual and numeric), written and oral presentation, team working and use of a range of information technologies and software tools.



For further details about the MSc Geographic Data Science, please get in touch with:

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Benefits of this programme

The degree benefits from staff within the Geographic Data Science Laboratory and Centre for Spatial Demographic Research. We are a large and world leading group in the area of computational and quantitative geographical information science.

Consumer Data Research Centre

As part of a £6m investment by the ESRC, the University of Liverpool houses a node of the Consumer Data Research Centre (<http://cdrc.ac.uk>), providing secure data facilities with access to a range of consumer and retail big data.



Programme Structure

Students take 60 credits of taught modules and a 60 credit research project. The 12-month course runs from September 2014. The taught component represents 60 credits and is organised into two 12-week semesters with assessment or examinations at the end of each semester in January and May. The remaining 120 credits are allocated to the research project. Assessment is by examinations, coursework and an individual project.

Core Modules

Semester 1
SOCI501 Introduction to Research (15 credits)
ENVS441 Data Collection Strategies and Techniques (15 credits)
ENVS563 Geographical Information Systems (15 credits) *
Semester 2
ENVS456 Web Mapping and Analysis (15 credits)
ENVS450 Data Analysis Strategies (15 credits)
ENVS453 Spatial Analysis (15 credits)
Summer
ENVS492 Dissertation (60 credits)

* Any student who already has core GIS training can take one optional module in place of ENVS563

Optional Modules

Semester 1
ENVS416 Theorising Human Geography (15 credits)
ENVS432 Theory Power and Ethics (15 credits)
COMP518 Database and Information Systems (15 credits)
COMP519 Web Programming (15 credits)
Semester 2
ENVS418 Population & Health Analysis and Projection (15 credits)
ENVS462 Survival and Event History Analysis (15 credits)
ENVS557 Understanding Social Exclusion (15 credits)

ENVS418 is a pre-requisite for ENVS462; Part-time students must take SOCI501 and ENVS563 (if required) in year one and ENVS492 in year two. Other modules may be taken in either year provided the total credits per year (excluding ENVS492) do not exceed 75

Entry Requirements

The entry requirements for MSc degrees at the University of Liverpool for overseas and international (OSI) students are a final degree grade equivalent to a UK 2:1 classification, in Geography, an environmental science, management or planning discipline. Previous relevant industry experience is very welcome. The course is taught in English and competency equivalent to IELTS 6.5 (no band lower than 6). Pre-sessional English courses are available at the University of Liverpool.