

**Programme of study for the Integrated degree of PhD and MSc (Data Analytics and Society)<sup>1</sup>**

**Year One (a total of 120 credits in taught modular courses will be taken as well as the research project)**

- The candidate will commence research under the direction of their supervisor(s)
- **Compulsory specialised subject modules (105 credits):**  
Semester One  
SLSP5301M Researching Society and Culture 30 credits  
GEOG5995M Programming for Social Sciences (University of Leeds) 15 credits  
JUMN5000M Understanding Data and its Environment (University of Manchester) 15 credits  
JUSH5000M Social Analytics & Visualisation (University of Sheffield) 15 credits  
JULV5000M Analysis of Human Dynamics (University of Liverpool) 15 credits

Semester Two

SLSP5301M Internship project 15 credits

- **Optional subject modules (15 credits):**

Semester One

GEOG5927M Predictive Analytics 15 credits  
GEOG5042M Geographic Data Analysis & Visualisation 15 credits  
LUBS5308M Business Analytics and Decision Science 15 credits  
LUBS5402M Consumer Behaviour 15 credits  
GEOG5947M Consumer Data Analysis and Visualisation 15 credits  
COMP5122M Data Science 15 credits  
COMP5112M Data Management 15 credits  
COMP5710M Algorithms 15 credits  
MATH5741M Statistical Theory and Methods 15 credits  
LUBS5221M Effective Decision Making 15 credits  
YCHI5010M Informatics in Health Care 15 credits  
YCHI5030M Process Modelling, Benefits and Change 15 credits  
YCHI5045M Statistics for Health Sciences 15 credits  
LUBS5312M Designing Information Systems 15 credits  
LUBS5238M Operations and Supply Chain Management 15 credits

Semester Two

GEOG5060M GIS and Environment 15 credits  
GEOG5240M Applied Population and Demographic Analysis 15 credits  
GEOG5870M Web-based GIS 15 credits  
GEOG5937M Applied GIS and Retail Modelling 15 credits  
GEOG5917M Big Data and Consumer Analytics 15 credits  
COMP5111M Big Data Systems 15 credits  
COMP5840M Data Mining and Text Analytics 15 credits  
COMP5850M Cloud Computing 15 credits  
COMP5940M Graph Theory: Structure and Algorithms 15 credits  
MATH5743M Statistical Learning 15 credits  
MATH5745M Multivariate Methods 15 credits  
LUBS5309M Forecasting and Advanced Business Analytics 15 credits  
LUBS5202M Risk Perception and Communication 15 credits  
LUBS5253M Advanced Management Decision Making 15 credits  
YCHI5060M Designing Future e-Health Systems 15 credits  
YCHI5055M Health Data Analytics and Visualisation 15 credits  
LUBS5231M Managing Global Logistics and Supply Chains 15 credits  
LUBS5277M Information Tools for Organisations 15 credits

Candidates are required to pass at least 90 taught credits in order to progress on the programme.

**Year Two (a total of 60 credits in taught modular courses will be taken as well as the research project)**

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<sup>1</sup> To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LL.M or MSc)

## INTEGRATED DEGREE OF PHD AND MSC (DATA ANALYTICS AND SOCIETY)

- The candidate will continue research under the direction of their supervisor(s)
- **Compulsory specialised subject modules (30 credits):**
  - Semester One and Two
  - GEOG5957M Dissertation 30 credits
- **Optional subject modules (30 credits):**
  - Semester One
  - GEOG5927M Predictive Analytics 15 credits
  - GEOG5042M Geographic Data Analysis & Visualisation 15 credits
  - LUBS5308M Business Analytics and Decision Science 15 credits
  - LUBS5402M Consumer Behaviour 15 credits
  - GEOG5947M Consumer Data Analysis and Visualisation 15 credits
  - COMP5122M Data Science 15 credits
  - COMP5112M Data Management 15 credits
  - COMP5710M Algorithms 15 credits
  - MATH5741M Statistical Theory and Methods 15 credits
  - LUBS5221M Effective Decision Making 15 credits
  - YCHI5010M Informatics in Health Care 15 credits
  - YCHI5030M Process Modelling, Benefits and Change 15 credits
  - YCHI5045M Statistics for Health Sciences 15 credits
  - LUBS5312M Designing Information Systems 15 credits
  - LUBS5238M Operations and Supply Chain Management 15 credits

### Semester Two

- GEOG5060M GIS and Environment 15 credits
- GEOG5240M Applied Population and Demographic Analysis 15 credits
- GEOG5870M Web-based GIS 15 credits
- GEOG5937M Applied GIS and Retail Modelling 15 credits
- GEOG5917M Big Data and Consumer Analytics 15 credits
- COMP5111M Big Data Systems 15 credits
- COMP5840M Data Mining and Text Analytics 15 credits
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- LUBS5277M Information Tools for Organisations 15 credits

Candidates who have been successful in the assessed modules and research components during Year 2 of study, will undergo a transfer assessment process, to be successfully completed by no later than the end of Year Two (Month 24) of study.

Candidates will be required to pass a minimum of 150 taught credits (of the total 180 credits undertaken) and successfully transfer to full PhD status in order to progress on the programme.

### **Years Three and Four**

- The candidate will continue research under the direction of their supervisor(s)

**Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme  
Integrated degree of PhD and MSc**

**1. Learning Outcomes**

- Identify, summarise and critically compare key theories, concepts and empirical research evidence within the fields of data analytics and social science;
- Apply high-level programming and analytical tools and techniques to analyse data describing social and cultural environments, and set appropriate objectives and strategies in complex situations;
- Develop transferable professional skills in working with others required for using social science data to form and implement analysis strategies, such as thought leadership;
- Demonstrate advanced independent research skills and analytical abilities in the fields of data analytics and social science, along with the ability to develop research ideas and questions and to undertake analysis of data and written presentation of results for practice;
- Develop and deliver professional quality oral presentations that distil insights from analyses of data from social and cultural perspectives to describe, interpret, and explain the social world;
- Appraise the relative strengths and weaknesses of different quantitative methodologies in analysing different types of social and cultural data, and apply knowledge in managing the implications of applied research;
- Develop a good understanding of contemporary topics in social science and data analytics and how the global landscape shapes the analysis of large datasets, and non-standard forms of data structure, such as those where it is the links between observations, rather than the observations themselves;
- Take a proactive and self-reflective role in working and to develop professional relationships with others;
- Apply ethical codes to the practice of data analytics in the context of social and cultural sciences.

**On completion of the programme students should have shown evidence of being able:**

- Demonstrate in-depth, specialist knowledge and mastery of techniques relevant to the disciplines of data analytics and social science and/or to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the disciplines;
- Identify, summarise and critically compare key theories, concepts and empirical research evidence within the fields of data analytics and social science;
- Apply high-level programming and analytical tools and techniques to analyse data describing social and cultural environments, and set appropriate objectives and strategies in complex situations;
- Develop transferable professional skills in working with others required for using social science data to form and implement analysis strategies, such as thought leadership;
- Demonstrate advanced independent research skills and analytical abilities in the fields of data analytics and social science, along with the ability to develop research ideas and questions and to undertake analysis of data and written presentation of results for practice;
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## INTEGRATED DEGREE OF PHD AND MSC (DATA ANALYTICS AND SOCIETY)

- Appraise the relative strengths and weaknesses of different quantitative methodologies in analysing different types of social and cultural data, and apply knowledge in managing the implications of applied research;
- Develop a good understanding of contemporary topics in social science and data analytics and how the global landscape shapes the analysis of large datasets, and non-standard forms of data structure, such as those where it is the links between observations, rather than the observations themselves;
- Take a proactive and self-reflective role in working and to develop professional relationships with others;
- Apply ethical codes to the practice of data analytics in the context of social and cultural sciences.

### 2. Transferable (Key) Skills

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

### 3. Learning Context

For Masters (Taught) students the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for students to develop:

- high level interests and informed opinions;
- develop to a high level their design and management of their learning activities ;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field.

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

### 4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the students in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- making reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data.