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MSc Geographical Information Science and Earth Observation

Dr Gary Watmough | 20 November 2025

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Meet the programme team

Programme Director

- Dr Gary Watmough
- Geospatial data for international development
- On going collaborations with UNICEF, CEOBS, NIRAS, Informatics
- Research focus: Africa and East Africa in particular

Cohort Lead

- Dr Qi Ou
- Lecturer in Radar Remote Sensing
- apply big data analytics to Earth Observation data
- Disaster Risk Reduction



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Why study this MSc?

- Fundamental to industry, decision making
- Industry is growing ~10% per year
- We focus on employability



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Why Edinburgh?

- **Reputation** - unequalled experience as the first GIS programme of its type in the world, established in 1985
- **Flexibility** - to tailor the programme to your needs (your background and career aspirations)
- **Networking** - highly committed staff, well-connected with government and industry, and an unrivalled alumni network
- **Careers** - proven track record in getting excellent jobs
- **Facilities** - the latest technologies (eg. software, sensors, platforms), staying ahead of trends and also providing the industry standard software needed to secure that first job.



Programme structure

Compulsory Courses	Semester	Credits
Introduction to Earth Observation	Semester 1	20
Approaches to Storing, Analysing and Delivering Spatial Data	Semester 1	20
Research, professional and field skills	Semester 1	20
Dissertation	April - August	60
3 option courses	Semester 2	60



Part-time study

- You may study this programme part-time as we are committed to helping people into education while continuing to work or managing family and personal commitments.
- A two-year part-time option is available.
- We recommend living within a commutable distance from Edinburgh to undertake part-time study, and we encourage you to contact us to discuss part-time study in more detail.



Option courses

- You must take at least 2 courses from the following list:

- Visual Analytics
- Earth Observation: New Platforms, Sensors, and Analytical Methods
- Geospatial Programming for Planetary Scale Analysis
- Remote Sensing for Disaster Management and Risk Mitigation
- GIS and Spatial Analytics for Health

- You can also take 1 of the option courses below:

- Introduction to Environmental Modelling
- Water Resource Management
- Environmental Governance and Policy
- Making Science Relevant to Policy and Decision Making
- Environmental Survey and Monitoring
- Nature Based Solutions



Teaching and assessment

- Courses can be delivered through a mix of lectures, seminars, workshops and computer lab classes,
- Assessments include reports, group and individual presentations, briefing documents, writing research papers.



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Dissertation

- An opportunity to explore, in-depth, a topic of your choice in relation to the programme, with the support of an academic supervisor
- Typically consists of a research paper and technical report of 15,000 words (combined total)
- You may also have the option to complete a dissertation project in partnership with an external organisation. Recent partners include: The Scottish Seabird Centre, Scottish Government, UNICEF, Historic Environment Scotland, NASA, and more



Previous dissertation topics

- Extraction of Tree Symbology from Historical Maps Using Machine Learning Techniques
- Application of the Soil & Water Assessment Tool (SWAT) to simulate land use and climate change impacts on the River Brora
- Mapping Characteristics of Ice Grounding Zones in the Amundsen Sea Region Using CryoSat-2
- Detecting Structural Damage in Conflict Zones
- Examining relationships between travel time to school and child deprivation



Facilities

- Well-equipped in-house GIS and EO computer laboratory with a broad range of software licences;
 - eCognition, ENVI, Pix4D,
 - ArcGIS Pro
 - Agisoft Metashape Pro
- Access to Edina Digimap data collections, parallel computing, HPC, and DataStore facilities and UAVs (drones)



Field trips

- Students normally undertake a residential field-course to the Scottish Highlands, where you manage your own small project
- As a small group, you will develop your skills in project management
- You will also have opportunities to develop field techniques, especially relating to GIS data capture and remote sensing data
- Field course locations may vary year to year, but will always align with course learning outcomes



Added-value learning experiences

- Unique EEO-AGI seminar programme, creates networking opportunities
- Residential Fieldtrip to the Scottish Highlands
- Student Dissertation Conference
- External UK conference attendance
 - eg. GISRUK, AGI
- GIS/EO Careers Event
- GIS Update Alumni Conference



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Career opportunities

- Global GIS market projected to reach US\$25.6 billion by 2030, growing at 12.1% p.a. (Prescient & Strategic Intelligence 2020)
- Market for EO data and services is expected to grow by 9.4% p.a. to reach \$12.1 billion by 2028 (Euroconsult 2018)
- UK GIS industry employs around 40,000 in products, services and as users (UK Market Study, ConsultingWhere Ltd)
- Our own valuable Edinburgh GIS alumni network



Career opportunities

- Industry demand for our graduates continues to grow rapidly, and our students are very employable
- Our extensive research and professional networks offer a range of opportunities for you to engage with practitioners, discover new ideas, explore job opportunities, or participate in cutting-edge research that influences both academia and industry



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Career opportunities

- This programme will prepare you for a wide range of roles, such as:
 - GIS Analyst
 - Geospatial Data Scientist
 - Researcher
 - Earth Observation Scientist
 - Earthquake Catastrophe Model Developer
 - PhD Researcher
- Examples of where our graduates have gained employment:
 - Google
 - Scottish Government
 - HALO Trust
 - EOLAS Insight Ltd
 - Space Intelligence
 - AON
 - ESRI UK and US



Our alumni - Farhiya Jarso

- Graduated 2025, MSc Earth Observation and Geoinformation Management
- "What I appreciated most about my masters degree in Edinburgh was how the programme perfectly balanced rigorous academics with personal freedom. I gained a strong foundation in advanced geospatial methods and their practical applications, and had the independence to pursue a dissertation project that reflected my interests, all with excellent support from my supervisor."



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When to apply?

- Due to high demand for this programme, we operate on a series of early application deadlines.
- We strongly recommend you apply as early as possible.
- You should avoid applying to more than one degree. Applicants who can demonstrate their understanding and commitment to a specific programme are preferred.
- If you plan to apply to more than one programme, you should discuss your choices with us before you submit your application.
- Where possible, we may make an alternative programme offer if you have been unsuccessful in your chosen programme.



Student cohort

- We welcome students from a wide range of backgrounds, such as:
 - humanities
 - natural sciences
 - engineering
 - computer science
 - social sciences
 - archaeology
- 492 applicants for 2025 entry*
- 40 new students on programmes in 2025/26*

*Combined total for MSc GIS & MSc EOGM degrees



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Scholarships and funding

- Featured funding
 - [Chevening Scholarships](#)
- School of GeoSciences scholarships
 - [See potential funding for GeoSciences students](#)
- You are encouraged to research the range of potential scholarships and other funding outside the University for which you may be eligible.
 - [Search for funding](#)



Next steps...

<https://edin.ac/student-chat-pg>



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Contact details for follow-up questions

- We apologise if we did not get through all of your questions in the time allotted for this session. If you have further questions that have not been answered, please email: futurestudents@ed.ac.uk
- Or Dr Gary Watmough: Gary.Watmough@ed.ac.uk





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Thank you

Dr Gary Watmough

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