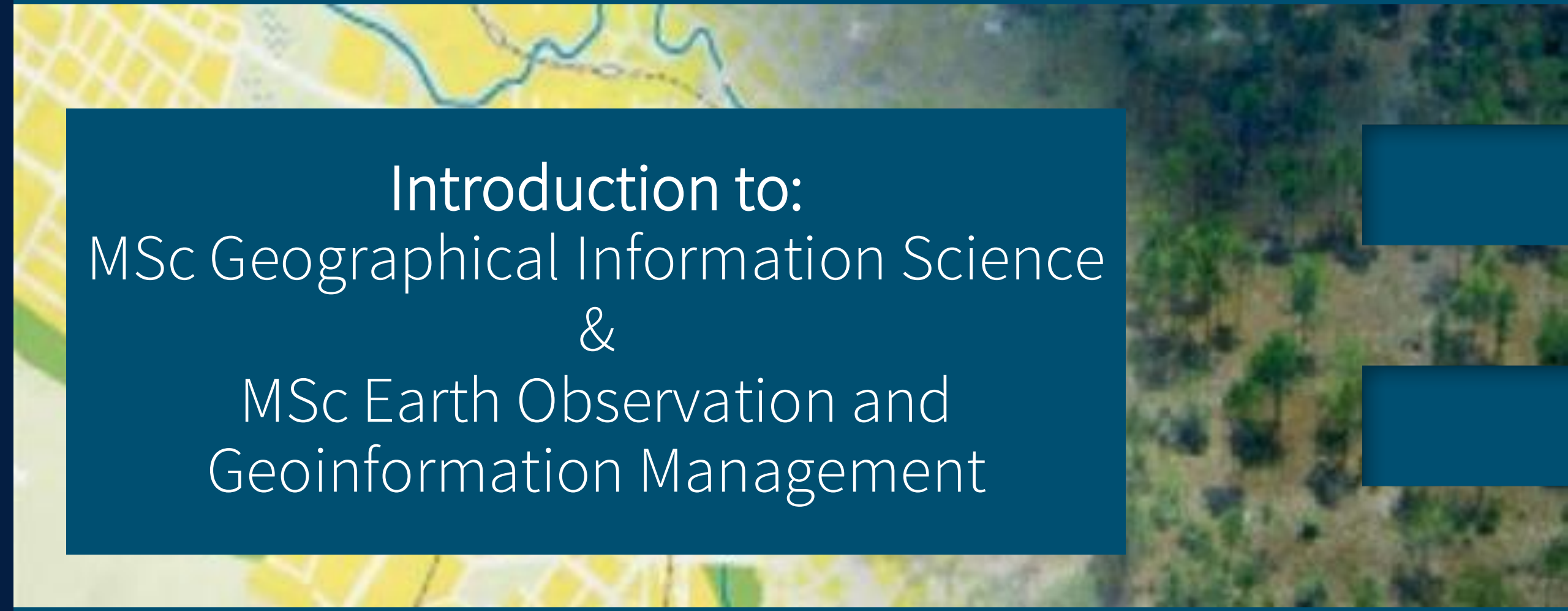
THE UNIVERSITY of EDINBURGH



Introduction to:
MSc Geographical Information Science
&
MSc Earth Observation and Geoinformation Management

Dr Gary Watmough and Dr Zhiqiang Feng | 12 November 2024

EDINBURGH
Extraordinary futures await

Who are we?

GIS

- Dr Zhiqiang Feng
- Senior Lecturer in Quantitative Human Geography & Geographical Information Science
- Scottish Centre for Administrative Data Research (SCADR)
- Research interests: GIS, health geography, population geography

EOGM

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

Why study Geographical Information Science?

- First of its type in the world
- Has a heritage of over 30 years
- Keeps you abreast of latest technological changes and industry trends

Why study Earth Observation and Geoinformation Management?

- Combines satellite data, technology and science to find new solutions to the world's biggest challenges
- Taught by world leading EO experts
- Unlike other EO programmes it also has a focus on geo-data management which is a crucial industrial skill

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 (GIS)

Find a full list of compulsory and optional courses on Degree Programme Timetables

Full-time programme:

- 3 compulsory courses:
  - Research Practice and Project Planning
  - Spatial Modelling and Analysis
  - Technological Infrastructures for GIS
- 3 optional courses
- Dissertation

Part-time programmes:

- 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.
- Two and three-year part-time options are available.
- We recommend living within a commutable distance from Edinburgh in order to undertake part-time study, and we encourage you to contact us to discuss part-time study in more detail.

Programme structure (EOGM)

Find a full list of compulsory and optional courses on Degree Programme Timetables

Full-time programme:

- Semester 2 compulsory courses:
  - Spatial Modelling and Analysis
  - Research Practice and Project Planning
- *If no EO experience/background then:*
  - Principles and Practice of Remote Sensing is also recommended (S1)
- *Semester 2; choose 1 of*
  - *Passive* **or** Active Remote Sensing
- Plus a range of further optional courses
- Dissertation

Part-time programmes:

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Optional Courses

Further 60 credits of courses from across the University

- Atmospheric Quality and Global Change
- Ecosystem Services 1: Ecosystem Dynamics and Functions
- Ecosystem Services 2: Ecosystem Values and Management
- Environmental Impact Assessment
- Earth Observation for Sustainable Development Goals
- Data science for society
- Forests and Environment
- Fundamentals for Remote Sensing
- GIS and Spatial analytics for Health
- Introduction to Envt Modelling
- Introduction to 3-Dimensional Climate Modelling
- Land Use/Environmental Interactions
- Management of Sustainable Development
- Marine Systems and Policies
- Object Orientated Software Engineering: Spatial Algorithms
- Participation in Policy and Planning
- Principles of Envt Sustainability
- Principles of Geographical Information Science
- Representing Data
- Technologies for Sustainable Energy
- Visual Analytics
- Water Resource Management

Teaching and assessment

- You will experience a range of teaching and assessment styles while you are studying.
- Courses can be delivered through a mix of:
  - lectures
  - tutorials
  - hands-on computer practicals
  - group-working experiences
  - and a longer field course
- The programmes are mainly assessed by practical coursework, presentations, reports and class tests. No essays!
- Most GIS students have no exams (only one exam for EOGM before Christmas)

Dissertations

- Unique format recognises the needs of industry and academia
- Open choice of topic; often in conjunction with external agencies or industry
- Guided by an expert supervisor
- Two parts: Academic research paper and technical report

Previous GIS titles include:

- 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

Previous EOGM titles include:

- Segmenting and Classifying building roofs in high resolution satellite imagery
- Mapping Characteristics of Ice Grounding Zones in the Amundsen Sea Region Using CryoSat-2
- Detecting Structural Damage in Conflict Zones

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

- GIS and EOGM students normally undertake a residential field-course, where you manage your own small GIS and EOGM project
- As a small group, you will develop your skills in project management
- Furthermore you will have opportunities of developing field techniques, especially relating to GIS data capture and remote sensing data

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

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.)
- 90% of jobs offered at a salary of >£26,000 (itjobswatch.co.uk)
- Our own valuable Edinburgh GIS alumni network

Career opportunities

- Industry demand for our GIS and EOGM graduates continues to grow rapidly, and our students are very employable.
- Expertise gained on the GIS programme will enable you to pursue a career in many GIS and related fields including:
  - database management, geomatics, 3D and big data, natural resource management, heritage management, terrain modelling, land use or health care planning, and emerging jobs in the space sector and IT consultancy.
- Expertise gained on the EOGM programme will allow you to pursue a career in many EOGM and related fields including:
  - Geospatial analysis, data analytics, environmental consultancy, research,
  - Further study – PhDs

Funding opportunities

- Featured funding
  - ScottishPowerMaster Scholarships (EOGM programme)

- 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

Asking questions

- When asking a question, select ‘Chat’, then type your question

Next steps…

https://virtualvisits.ed.ac.uk/pg

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

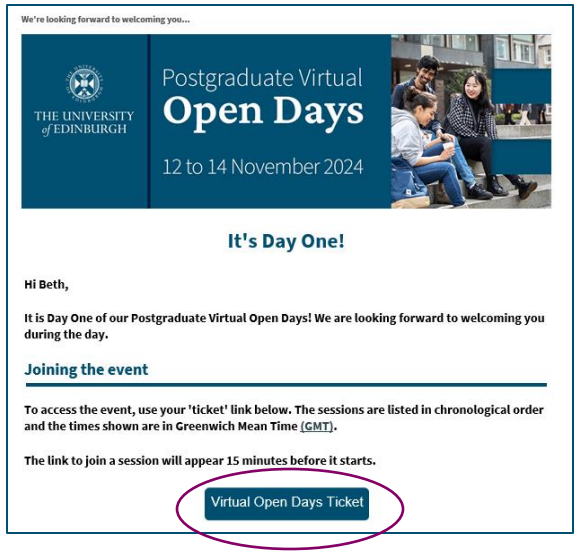
Contact details for follow-up questions

- 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

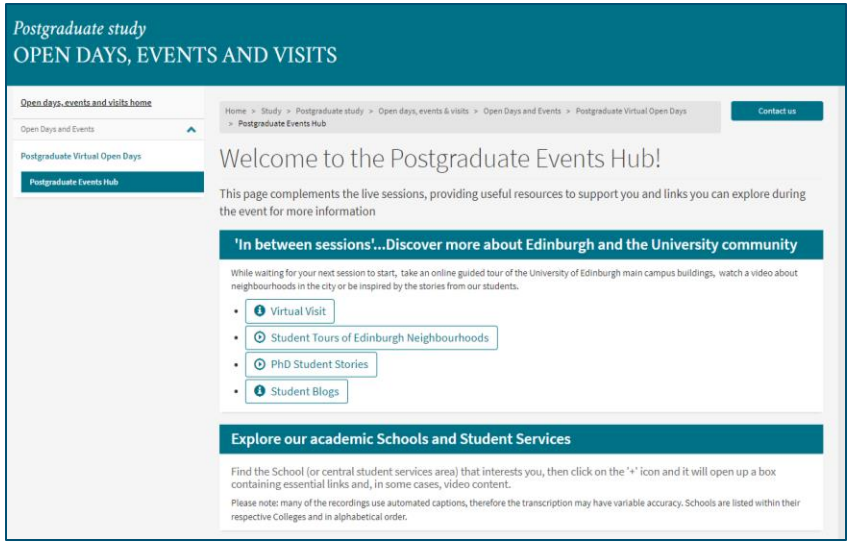
- *Or for EOGM: Dr Gary Watmough:* Gary.Watmough@ed.ac.uk
- *Or for GIS: Dr Zhiqiang Feng:* Zhiqiang.Feng@ed.ac.uk

Thank you – click ‘Leave’ when the session ends

- Return to your ‘e-ticket’ to find and attend other sessions you’ve booked – by clicking on the button in the email we sent you…



- …and visit the events hub:
- https://edin.ac/4gZuP3G



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Thank you

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