# Module Information

**Credit value:** 15 credits

**Module convener:** Dr Stuart Grieve (s.grieve@qmul.ac.uk, Room 206)

**Advice and feedback hours:**

- Mondays 12:00 - 13:00
- Tuesdays 10:00 - 11:00
- Friday 10:00 - 11:00 **Dedicated slot for this module** Maths Building MB 302

**Timetable:** Semester A, Thursday 9:00 - 12:00, Queens Building QB-212

# Module Overview

## Module Aims

The aim of this module is to develop an understanding of the implementation and application of cutting edge geospatial analysis and visualisation techniques. We will focus on understanding how to analyse geospatial data efficiently, for a range of applications. Another focus will be on the effective communication of geospatial data and their analysis outputs, to a broad range of audiences. We will examine the integration of raster and vector data in complex geospatial analyses and develop an understanding of how to construct such analyses independently. This module will teach computational skills in the context of the implementation and application of geospatial analysis techniques, and will be valuable to students who wish to develop these skills for their future careers.

## Learning Outcomes

On successful completion of the module students will be able to demonstrate:

- An understanding of how to appropriately apply geospatial analysis techniques in a range of contexts
- An understanding of how to present spatial information in a compelling manner
- Computational, statistical and visualisation techniques
- Knowledge of the implementation and application of complex geospatial analysis techniques
- Logical thinking and problem solving
- Good quality technical writing
- Self-learning and collaborative skills whilst writing and understanding algorithms and computer code

- An ability to review current literature, drawing on interdisciplinary perspectives

## Contact Hours and Attendance

**Lectures/Practicals:** 30 hours

**Dedicated office Hours:** 11 hours

**Independent study**: 120 hours

All teaching for this course will take place in person. Each week there is a 3 hour timetabled session. On some weeks this will consist of a lecture, followed by a practical to be completed independently by the students. In other weeks, the session will be an interactive live coding lesson. Each week, in addition to these 3 timetabled hours, there will be a dedicated class office hour, where students can get 1:1 or small group feedback and help with class material.

Lectures in this course are integrated with practical work, and build week to week so skipping a class will impact your ability to pass the course. It is your responsibility to catch up on any material you have missed prior to the next class.

## QMplus

QMplus will be used to provide lecture and practical materials in advance of each class. Data which will be used in practical work and assessments will be provided on QMplus.

Lectures and practicals will be recorded via QReview to support revision, however these recordings are not a substitute for attending class. Office hours will not be recorded.

## Reading

The following texts provide detailed information on many of the concepts and techniques presented throughout this course. Further reading and references will be highlighted during each class.

- Burrough, P., McDonnell, R. and Lloyd, C. (2015). Principles of geographical information systems. Third Edition.
- Tufte, E. (2001). The visual display of quantitative information. Second Edition.
- Monmonnier, M. (2018). How to lie with maps. Third edition.

There are copies of all of these books in the Mile End Library. In all three cases older versions of these books are also available, and are still suitable to refer to.

**Where specific chapters are assigned as readings, pdfs will be posted on QMplus.**

## Timetable

| Week | Date | Time | Session |
|---|---|---|---|
| 1 | 28/9 | 9:00-12:00 | Module intro & Data visualisation |
| 2 | 5/10 | 9:00-12:00 | Data visualisation and plotting 1 |
| 3 | 12/10 | 9:00-12:00 | Data visualisation and plotting 2 |
| 4 | 19/10 | 9:00-12:00 | Data visualisation and plotting 3 |
| 5 | 26/10 | 9:00-12:00 | Data visualisation and plotting 4 |
| 6 | 2/11 | 9:00-12:00 | GIS is tedious: Automating your work 1 |
| 7 | - | - | **Reading Week: No class** |
| 8 | 16/11 | 9:00-12:00 | GIS is tedious: Automating your work 2 |
| 9 | 23/11 | 9:00-12:00 | GIS is tedious: Automating your work 3 |
| 10 | 30/11 | 9:00-12:00 | Getting data from the web |
| 11 | 7/11 | 9:00-12:00 | Getting data from the web |
| 12 | 14/11 | 9:00-12:00 | Coursework clinic and wrap-up |

## Assessment

This module is assessed solely via coursework. Full details for each of these assessments will be provided in class and on QMplus.

Full Coursework Submission Guidelines, details of Penalties for Late Submission and information on how to make an application to the School of Geography's Extenuating Circumstances Panel can be found in the Undergraduate Information Zone via the QMplus Landing Page for the School of Geography.

## Feedback

Feedback and provisional marks for coursework will be returned within 15 working days of submission. Informal feedback will be provided to both the class and on a 1:1 basis during each week's scheduled class and students are encouraged to make use of office hours to get further feedback on their progress.

## Acting on Feedback from Previous Years

Each year, we gather feedback from students on our courses, as well as get feedback from other staff in the department and from our external examiners. In the last four years, I have made the following changes to the module:

- Removed a presentation assessment
  - Students felt that the week spent on presentations could have been better spent learning in other ways.
- Added dedicated office hour
  - We used to only have 2 dedicated office hours, one before each assessment. These were very popular, so I am running them every week during the module.
- Making readings more available
  - Students couldn't always get a copy of readings from the library. I have requested more hard copies be purchased and will post PDF scans of readings on QMplus.
- More python AND more ArcMap
  - Some students wanted more Python and less ArcMap, others wanted the reverse. My plan this year is to have more of both, partly enabled by removing the presentation assessment.
- QMplus now organised by week rather than topic
  - Students struggled to find things on the QMplus page. This year everything will be organised into weeks rather than topics to make things easier to find.
- Provide more self-study exercises for Python
- I'm too nice with feedback
  - Some students felt that my feedback was not critical enough - I will endeavour to provide more clear criticisms in feedback, tied to ways to improve your work in future.
- Adding some information about GIS careers to the end of module wrap-up