

# Introduction to Field Spectroscopy Course

Room 232, Grant Institute, School of Geosciences,  
King's Buildings, University of Edinburgh, EH9 3FE

25<sup>th</sup> April to 27<sup>th</sup> April 2017

## Programme

Note. We will try to make measurements outside at some point during the course, weather permitting. The program, therefore, may be subject to change at short notice and may require that the program be extended on Tuesday or Wednesday.

### Tuesday 25<sup>th</sup> April. Room 232, Grant Institute, King's Buildings

- 9:00 – 9:30      *Arrival: coffee and doughnuts*
- 9:30 – 10:30     Introduction - The role of field spectroscopy in research (Andrew Gray, FSF)
- 10:30 – 11:00    Technical introduction (Chris MacLellan, FSF)
- 11:00 – 11:15    *Coffee, tea & biscuits*
- 11:15 – 12:30    The design and calibration of spectroradiometers (Chris MacLellan)
- 12:30 – 13:30    *Lunch*
- 13:30 – 15:00    Principles of Field Spectroscopy (Gary Llewellyn, BAS)
- 15:00 – 15:15    *Coffee, tea & biscuits*
- 15:15 – 17:00    UAVs in Field Spectroscopy (Tom Wade, Airborne Geoscience; Chris MacLellan)
- 18:00            Evening Dinner at [Pataka Restaurant](#), EH9 IPN (at participants own expense).

### Wednesday 26<sup>th</sup> April. Room 232, Grant Institute, King's Buildings

- 09:30 – 09:15    *Coffee, tea & Danish pastries*
- 09:15 – 10:15    NERC Airborne Research Facility (NERC-ARF): Field measurements in support of airborne research. (Gary Llewellyn)
- 10:15 – 10:35    Geophysical Equipment Facility (GEF): Global Navigation Satellite Systems (GNSS) for ground control points. (Alan Hobbs, NERC GEF)

10:35 – 10:45 Field Practical Plan (Andrew Gray)

10:45 – 11:00 *Coffee, tea & biscuits and prepare for fieldwork.*

11:00 – 14:00 Field spectroscopy practical – Blackford Hill (including packed lunch)

**PM Session: Room 301, Crew Building (number 30 on the map).**

14:15 – 14:45 Interpreting GNSS data - computer practical (Alan Hobbs)

14:45 – 15:00 *Coffee, tea & biscuits*

15:00 - 15:30 The processing and analysis of spectral datasets (Gary Llewellyn and Chris MacLellan)

15:30 – 17:00 Data processing - computer practical (Chris MacLellan)

**Thursday 27<sup>th</sup> April Room 301, Crew Building, King's Buildings**

09:00 – 09:30 Introduction: NERC ARF-Data Analysis Node (Daniel Clewley, PML)

09:30 – 10:00 Atmospheric correction for airborne data (Daniel Clewley)

10:00 – 10:15 *Coffee, tea & biscuits*

10:15 - 12:15 Image analysis using the empirical line method in ENVI - computer workshop (Daniel Clewley)

12:15 – 12:30 Workshop conclusions (Andrew Gray)

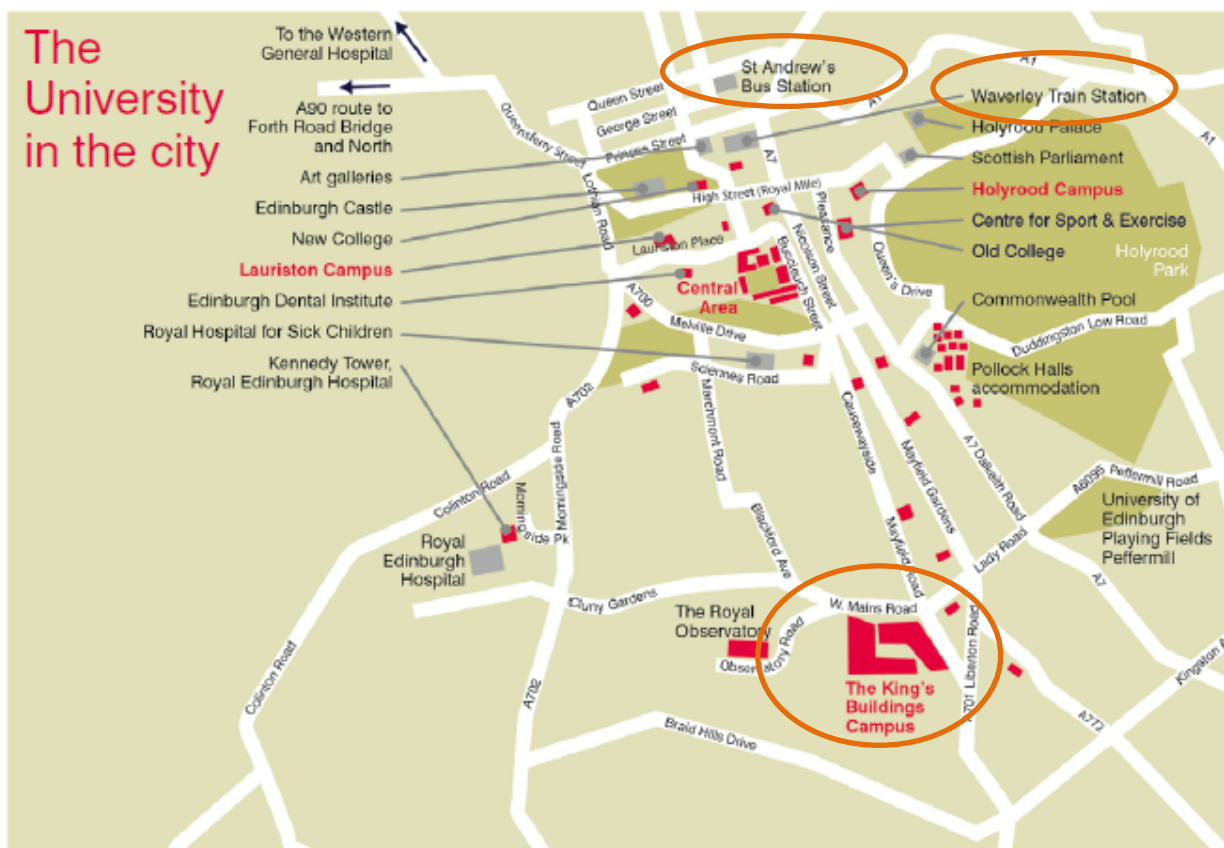
## Getting Here:

The Field Spectroscopy Facility is based in the King's Buildings campus to the south of the city centre (see the below map). The University's webpages provide useful information on travelling to King's Buildings and the Grant Institute by various modes of transport. Please see the following link for more information: <http://www.ed.ac.uk/transport/travelling-here/kings-buildings>

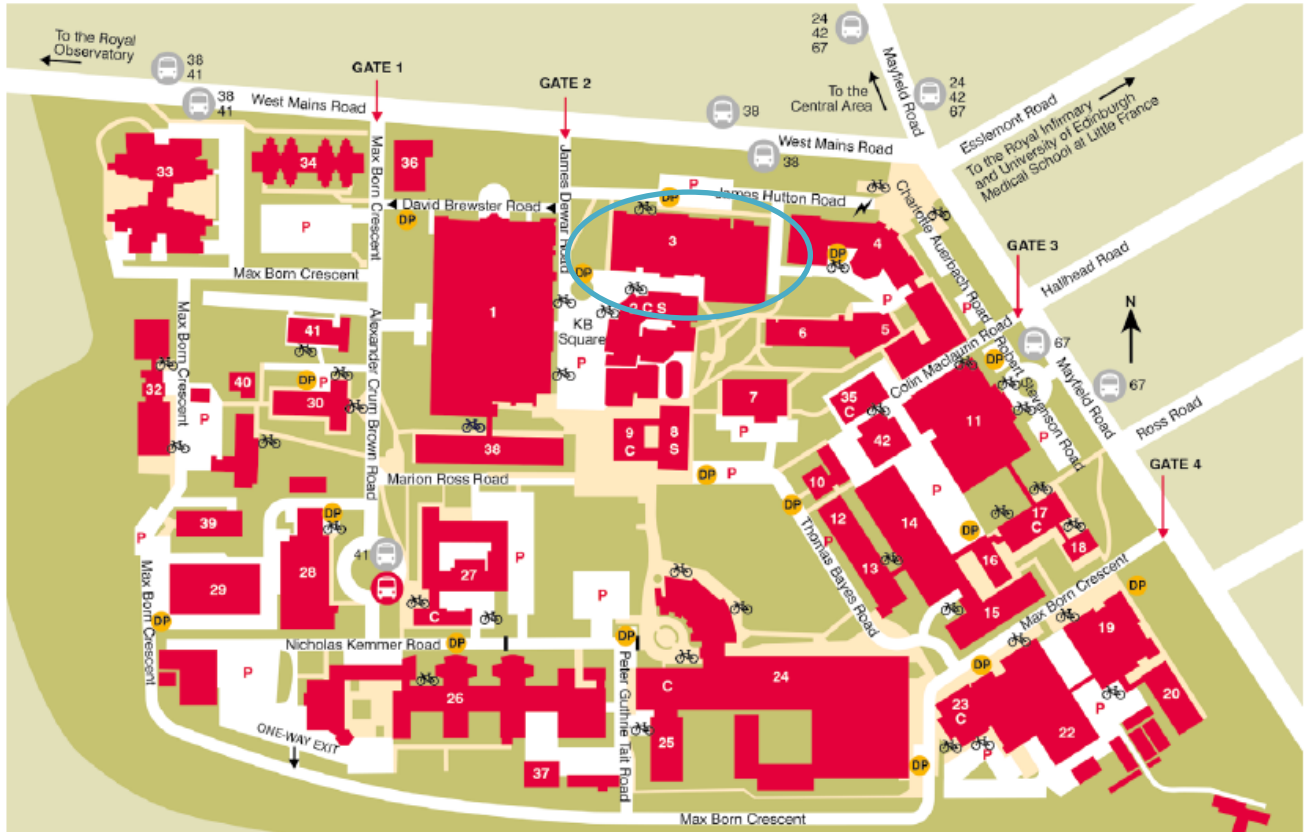
You can also use their interactive maps to find the Grant Institute here: <http://www.ed.ac.uk/maps/maps?building=grant-institute>

**OUR POSTCODE: EH9 3FE**

Map of Edinburgh showing location of central University area, King's Buildings Campus and the major train and bus stations serving Edinburgh.



Map of the King's Buildings campus showing the Grant institute (#3) (where the Field Spectroscopy Facility is based, highlighted in blue).



## The King's Buildings Campus

- |   |  |   |                                   |
|---|--|---|-----------------------------------|
| 1 Joseph Black Building                 | 14 Fleeming Jenkin Building                                    | 27 Roger Land Building                    | 40 UK Biochar Research Centre     |
| 2 KB House: EUSA                        | 15 Alrick Building   | 28 Scottish Microelectronics Centre       | 41 Crew Annex                     |
| 3 Grant Institute                       | 16 Faraday Building  | 29 FloWave Ocean Energy Research Facility | 42 Engineering Structures Lab     |
| 4 Ashworth Building                     | 17 Hudson Beare Building                                       | 30 Crew Building                          | C Cafe S Shop                     |
| 5 March Building                        | 18 Hudson Beare Lecture Theatre                                | 32 Weir Building                          | P Permit parking                  |
| 6 John Murray Building                  | 19 Daniel Rutherford Building                                  | 33 Murchison House                        | DP Disabled permit parking        |
| 7 Ann Walker Building                   | 20 CH Waddington Building                                      | 34 Student accommodation                  | ⚡ Electric car charging point     |
| 8 KB Centre; KB Library Study Centre    | 22 Darwin Building   | 35 Mary Brück Building                    | 🚶 Pedestrian area                 |
| 9 The Noreen and Kenneth Murray Library | 23 Swann Building  | 36 Arcadia Nursery                        | 🚲 Bike racks                      |
| 10 John Muir Building                   | 24 James Clerk Maxwell Building; Learning and Teaching Cluster | 37 Estates Hub                            | 🚧 Traffic barrier                 |
| 11 Sanderson Building                   | 25 Erskine Williamson Building                                 | 38 Christina Miller Building              | 🚌 Shuttle bus to the Central Area |
| 12 William Rankine Building             | 26 Peter Wilson Building (SRUC)                                | 39 Biospace                               | 🚗 Public bus                      |
| 13 Alexander Graham Bell Building       | <i>Access to this building's car park must be via Gate 1</i>   |   |                                   |

The timetable for the shuttle bus between the Central Area and the King's Buildings can be viewed at [www.ed.ac.uk/shuttle-bus](http://www.ed.ac.uk/shuttle-bus)