



## Civil Engineering and the University of Strathclyde

(GRPE). The GRPE was funded to promote multidisciplinary collaboration between leading research groups in the west of Scotland and to provide world-class joint research facilities (see [www.grpeng.ac.uk](http://www.grpeng.ac.uk)). Member universities include Strathclyde, Glasgow, Glasgow Caledonian University and the University of the West of Scotland. In addition, the Department hosts the David Livingstone Centre for Sustainability (DLCS) which aims to promote cross-disciplinary programmes in teaching and research in the areas of environment and sustainability across the whole University (see [www.strath.ac.uk/dlcs](http://www.strath.ac.uk/dlcs)).

### The University

The University is located in the heart of Glasgow, the UK's fourth largest city. Glasgow is one of the liveliest cities you'll ever experience. It is famous for its shopping, vibrant music scene and brilliant nightlife, as well as its cultural and architectural heritage. You will be spoiled for choice with all the restaurants, museums, shops and places of interest within easy walking distance.

Just beyond the city of Glasgow lies some of Scotland's most beautiful scenery. The local area is rich in history and heritage and the Trossachs, the Highlands and the Borders are easily accessible.

### The Department

Civil Engineering at Strathclyde is one of the first departments in the UK to fully embrace the importance of the environment in today's world. It is a strong and forward-looking department and the ideal choice for anyone interested in undertaking a postgraduate degree that will benefit them in the job market. Our strong links to industry and public bodies are a unique feature of the Department and are integral to our approach to research and education. These links also provide our students with valuable contacts outside the world of academia. The Department is one of the main providers of graduates in Civil Engineering and Environmental Health in Scotland.

The Department leads the Joint Research Institute in Environment, Infrastructure and Transportation, formed in 2007 under the Glasgow Research Partnership in Engineering



## Department of Civil Engineering – David Livingstone Centre for Sustainability

MSc/PgDip/PgCert

## ENVIRONMENTAL FORENSICS

*A collaboration between the Department of Civil Engineering and the Centre for Forensic Science.*

This unique MSc, the first of its kind in the UK, harnesses Strathclyde's world-leading expertise in environmental forensics. Professor Robert Kalin, the course manager, is a leading international figure in Environmental Forensics. The course is the result of a close collaboration between the Department of Civil Engineering and the Centre for Forensic Science, the UK's most respected Forensic Science research and education centre (located in the Department of Pure & Applied Chemistry). There is also input from Strathclyde's Law School.

According to the International Society of Environmental Forensics: "Environmental Forensics has grown out of the need for a platform to present scientific investigations that address environmental contamination subjected to law, public debate, or formal argumentation, as well as the evaluation of the basic science



that serves as underpinnings to those activities". This MSc addresses these needs. It will develop students' ability to make sound judgement within a legal context, in relation to the impact of human activity on the environment.

The course is available full-time (one year) and part-time (two years). It is suitable for students from all disciplinary backgrounds and/or employment situations.

### Fees

For information on current fee levels, see: [www.strath.ac.uk/registry/students/finance](http://www.strath.ac.uk/registry/students/finance)

### How to Apply

Apply online via the postgraduate course page: [www.strath.ac.uk/courses/postgraduate](http://www.strath.ac.uk/courses/postgraduate)

### Contact

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For more information about the Department and our courses see:

[www.strath.ac.uk/civeng/pg](http://www.strath.ac.uk/civeng/pg)

## The Programme and its International Context

The fact that companies are increasingly liable for environmental damage they cause has had a significant effect in curtailing new brownfield redevelopment and major civil engineering infrastructure projects. This has been driven largely by the new European Directives that are causing concern among many engineering firms where accrued environmental liabilities could reach 60% of annual profits (among publicly-traded firms publishing these figures).

In the UK, environmental liabilities have generally been the remit of regulators through enforcement of environmental legislation (eg the Scottish Environmental Protection Agency (SEPA) or the Environment Agency for England and Wales) and through negotiation between parties and insurers (eg brownfield redevelopment).

The current 'risk-based' approach by the regulator allows for a pragmatic approach to environmental remediation. However this approach fails to provide a convincing 'weight of evidence' needed for legal decisions when risk and responsibility must be partitioned. For these reasons, over the past few years, the new area of Environmental Forensics has emerged.

## Programme Structure

The Diploma and MSc courses run concurrently, involving a curriculum of six core modules (totalling 90 credits) and a range of optional modules (minimum of 30 credits). Each module is taught two to three hours per week over eight to 12 weeks. In addition, MSc students undertake a dissertation (60 credits). Progress to the MSc is dependent on performance in the instructional modules.

For part-time study the modules can be taken over two years (attending classes typically one day per week) with the dissertation completed in the second year. In addition to the dissertation topics proposed by course leaders and industrial partners, part-time students may propose topics of particular relevance to their employer.

## Core Modules

### Dept of Civil Engineering:

- Site Investigation and Risk Assessment
- Fundamentals of Environmental Forensics
- Recycling Urban Land
- Research Methodology with Environmental Monitoring & Analysis

### Centre for Forensic Science, (Dept of Pure & Applied Chemistry):

- Essentials of Forensic Science

### The Law School:

- UK and EU Environmental Law

## Optional Modules

(All taught by Civil Engineering – not all classes may be offered each year)

- Atmospheric Pollution Impact Assessment
- Waste Management and Landfill Design
- Hydrogeology
- Pollution and Rehabilitation of Degraded Ecosystems
- Spatial Query and Analysis using GIS

## Duration of Course

MSc: 12 months full-time; 24 months part-time  
PgDip: 9 months full-time; 18 months part-time  
PgCert: 6 months full-time; 12 months part-time

## Entry Requirements

MSc: A first degree or other qualification equivalent to a second-class Honours degree from a UK University (or equivalent) in any discipline; two supportive academic references; and/or appropriate professional experience or achievements.

PgDip: A wider range of qualifications will be considered by the course leader.

In all cases, for candidates whose first language is not English, minimum standards of written and spoken English are an IELTS score of 6.5 (or a TOEFL score of 600, TOEFL internet-based test of 100, TOEFL computer-based test of 250).

## Postgraduate Courses Offered by the Department

In addition to the MSc in Environmental Forensics the Department also offers the courses listed below. All the courses already involve extensive industrial collaboration and further partnerships with companies, government agencies and NGOs are being developed.

- MSc Environmental Engineering
- MSc Environmental Entrepreneurship – in collaboration with the Hunter Centre for Entrepreneurship, the first degree of its kind in Europe
- MSc Environmental Health – accredited by REHIS
- MSc Environmental Science\*
- MSc Environmental Studies
- MSc Geotechnics\* – in partnership with industry
- MSc Global Water Sustainability\*
- MSc Hydrogeology – new for 2010-11
- MSc Science, Technology & Sustainability

- MRes Geo-Environmental Engineering
- MRes Integrated Pollution Prevention & Control (IPPC)
- MRes Sustainable Construction & Infrastructure

\* A joint degree between the Universities of Strathclyde and Glasgow

Accreditation has been sought from the Institution of Civil Engineers (ICE) for our MSc courses as 'matching sections'.

## Careers

As this is the first MSc in Environmental Forensics in the UK, the career prospects of graduates are excellent. The course has been designed so that people from industry can complete the MSc in part-time mode over two years or via Open Access up to five years.