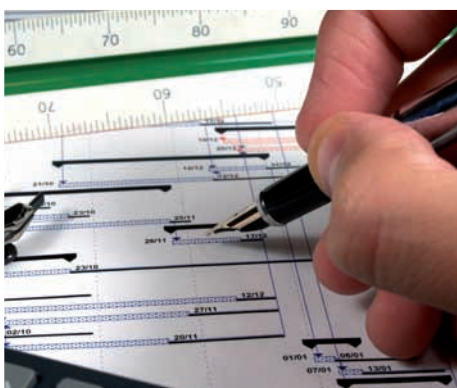


School of Civil Engineering
FACULTY OF ENGINEERING



UNIVERSITY OF LEEDS

Postgraduate Masters Courses



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For current information on courses, fees and entry requirements please visit our website at www.engineering.leeds.ac.uk/civil/postgraduate

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School of Civil Engineering

With 40 academic staff and more than 200 postgraduate students, we are one of the largest civil engineering schools in the UK.

We provide an excellent educational experience for students in Civil Engineering, providing taught courses in the areas of, structural, environmental engineering, architectural technology, sanitation and waste management, infrastructure and asset management and project management.

Our taught courses are based on our research profile to ensure what you are taught is relevant, practical and up to date. Research activity takes place across many different countries and we have a strong reputation for our pioneering work in developing countries. This ranges from the treatment of waste and wastewater in tropical climates and the development of energy centres in India to the design of low-cost housing in Malaysia and Brazil.

We have long-established links with industry and other international organisations, both in the UK and overseas. An Industrial Advisory Board and an Employers Group ensure that industrial partners provide input into the continuous development and review of our courses.



We also have well-established collaborative links with other schools in the University, and with other academic institutions around the world.

Our masters courses will allow you to further your knowledge, develop and widen your skills and improve your career prospects. They are also excellent preparation for those individuals wishing to undertake further research in the form of a PhD.



Why choose us?

Research intensive

Our MSc courses are delivered by academic staff who are research active and have extensive knowledge and expertise accumulated over time, many of whom are leading experts in their chosen fields of specialisation. Our research feeds directly into our teaching, which means you'll learn about the latest developments within your field from world-class academics who will challenge, encourage and support you.

First-class facilities

Our students have access to all the facilities you would expect from a top-rated UK research school.

We have a new suite of Public Health laboratories with separate areas for solid waste, water and wastewater, a class II microbiology lab and clean room for molecular biology work including PCR techniques. Specialist facilities also include a class II aerobiology chamber that can be used for room-scale bioaerosol experiments, a wide range of bioaerosol sampling equipment for lab and site-based studies and waste respirometers to measure process reaction rates.



We also have bench-top tests to look at the fundamental behaviour of materials and soils and testing rigs for full-scale structures built of construction materials including recycled and composite materials. Specialist facilities include research laboratories to investigate the behaviour of soils in various environments, advanced techniques to study the micro behaviour of cementitious materials, full-scale field monitoring of structures and building services.

Computational facilities are excellent and include our own in-house provision as well as access to high-performance computing for particularly intensive analytical work. Software includes industry-standard CFD, structural and geotechnical modelling and Building Information Modelling packages.



Strong industrial links

The content of each course is industrially orientated and members of staff maintain close contact with industry to ensure that material is up to date and in-line with employer needs.

An Industrial Advisory Board and an Employers Group ensure that industrial partners provide input into the ongoing development and review of the courses. Industrial partners also contribute to some teaching through guest lectures, hosting and supervising projects, as well as funding prizes.

On some courses there are opportunities to visit sites of special interest. You can also benefit from our strong links with industry through sponsorship and part-time employment opportunities.

Our industrial partners include:

- Arup
- Balfour Beatty
- Bam
- Bentley Construction
- Black and Veatch
- Carillion
- Galliford-Morrison (ET4)
- Halcrow
- Jackson Civil Engineering
- NHS
- Atkins
- MWH

Contact with these partners and others throughout your course is a significant advantage when it comes to the career path you choose after graduation.

Careers

Alongside the specific content of our courses, you will be able to enhance your transferable professional skills, which are vital for future career development. The courses incorporate training in presentation skills, scientific writing, project management, intellectual property awareness, team working and applying research methodology

Engineering Careers Fair

We hold an annual Engineering and Computing Careers Fair attracting over 32 graduate recruiters including organisations such as Atkins, AECOM, Balfour Beatty, BP, Deloitte, Ernst & Young, Jaguar Land Rover, Procter and Gamble, Network Rail and Thales, to name but a few. The fair provides you with the chance to explore the opportunities available after graduation.

Careers Centre

Our on-campus Careers Centre is one of the largest in the country. It offers an excellent range of services and has a great relationship with graduate recruiters. The Careers Centre can help you to improve your CV and complete job applications. The Careers Centre also holds training events and workshops to assist you with your career progression.

More information on the Careers Centre can be found at www.careerweb.leeds.ac.uk



Learning and assessment



All of our MSc courses operate on a credit-based modular system. A standard module is worth 15 credits and the research project is worth 60 credits. You are required to take modules totalling 180 credits. The taught modules and preparatory work for the research project is undertaken over the first two semesters with the summer being devoted to the research project.

Course work assignments are a significant part of the course and contribute towards the module assessment. Examinations may also be included as part of the assessment. Assignments may include group presentations, reports, essays, or practical work. The research project is assessed by dissertation and oral presentation.

All of the MSc courses can be undertaken on a full-time basis (one calendar year – September to September) or on a part-time basis (2 years) for UK/EU-based students. Part-time students may be allowed to extend their study to a third year for the purposes of writing up their research project.

Most modules are delivered intensively over 4 to 5 days to match the varying needs and commitments of students and employers, and allow flexibility for part-time students in full-time employment. The MSc in Structural Engineering is the exception, with the modules in the first semester being taught in a more traditional format.

Research project

The project is possibly one of the most satisfying parts of the course. It gives you the opportunity to take what you have learnt and to explore and develop specific interests by applying it to your own piece of research.

The project is chosen by you and is usually associated with one of our world-class research institutes. You will work individually on a project and you will be assigned a project supervisor.

Continuing professional development

Some modules on the courses can also be taken as individual short courses. This is ideal if you want to undertake Continuing Professional Development but your work and other commitments mean that you are not able to commit to the full-time Masters programmes. For further information contact our Postgraduate Admissions Team.

t: +44 (0)113 343 2308/2302

The application process

Due to the high demand for our courses, we advise applying early. Applications from international students should be submitted by mid July and UK applications by early September of the year of entry. However, there is an application deadline of 30 June relating to the excellence scholarship and to be eligible for this, applicants need to have an offer of a place on one of our postgraduate courses.

For further information about applying for postgraduate study visit

www.leeds.ac.uk/pgthowtoapply

Fees

For up-to-date details on fees please contact our Postgraduate Admissions Team or visit

www.engineering.leeds.ac.uk/masters-courses/fees

Scholarships

We are part of the Faculty of Engineering, which offers a range of scholarships.

Details can be found at

www.engineering.leeds.ac.uk/scholarships

or by contacting the Postgraduate Admissions Team. The University also offers a number of scholarships, for more information on these visit

<http://scholarships.leeds.ac.uk>

English language requirements

Applicants whose first language is not English, or whose Bachelors degree is not from a university in an English speaking country, are required to provide evidence of proficiency in English by having attained the following or its equivalent:

IELTS – 6.5 with not less than 6.0 in listening, reading, speaking and writing

Pre-sessional English language courses are available at the Language Centre for students who wish to improve their language skills prior to commencing their studies, to find out more visit

www.leeds.ac.uk/languages/intro

Contact us

If you have any queries please contact:

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School of Civil Engineering
University of Leeds
Leeds LS2 9JT, UK

t: +44 (0)113 343 2308/2302

e: pgcivil@leeds.ac.uk

w: www.engineering.leeds.ac.uk/civil

Visit us

You are welcome to visit us, please contact the Postgraduate Admissions Team on

t: +44 (0)113 343 2308/2302



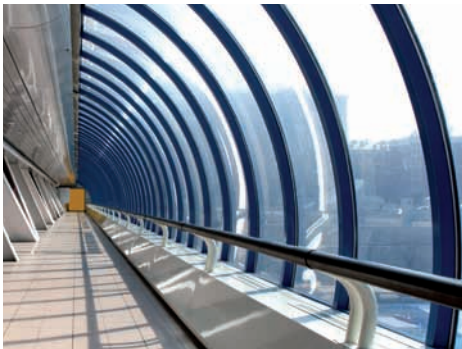
Postgraduate masters courses:

MSc Engineering Project Management

Many engineering projects are now undertaken by multidisciplinary teams who are responsible for the whole project life cycle in a multi-project or programme management environment. Typically, these projects are becoming increasingly complex.

As a result, team members are expected to have a range of project management skills including contractual knowledge, financial engineering competency and strategic awareness.

The course covers the entire project management process from inception and feasibility, engineering, procurement and implementation, through to commissioning and operation. Particular emphasis is placed on financial, planning and management aspects of the project life cycle.



Who will benefit?

Engineers, technologists and managers, who want to develop and enhance their project and programme management skills. This course will develop the expertise necessary for improved business delivery of projects and programmes in an engineering environment, perhaps in construction, oil and gas, petrochemical or process industries. In order to ensure relevance with industry the course has also been developed to comply with international standards and both the APM and PMI Bodies of Knowledge.

Key outcomes

Upon successful completion of the course, you will have:

- A higher level of generic and transferable management skills
- a better understanding of the principles of project management within an engineering environment
- familiarisation with engineering problems encountered and the techniques used in the appraisal and implementation of projects
- a positive attitude to the setting and achieving of realistic performance targets
- a better understanding of working in project structures, with a variety of procurement routes and an emphasis on collaborative working throughout the project life cycle.

Typical careers

Many of our previous graduates now work as project managers for construction companies, in consultancy or for large client organisations. Alternatively, you may choose to continue to work as an engineer or general manager, but with an increased input into the project work of an organisation.

Chartered Engineer status

This degree is accredited as meeting the requirements for Further Learning for a Chartered Engineer (CEng) for candidates who have already acquired an Accredited CEng (Partial) BEng (Hons) undergraduate first degree.

Entry requirements

A degree equivalent to a UK second class (2:2) honours degree, or higher, in an engineering or technological discipline. A managerial or economic discipline will be considered providing applicants have 2 years relevant work experience in an engineering environment. Consideration will be given to professionally qualified and experienced candidates without formal qualifications.

For English language requirements see page 07.

Course content

You will study the following seven modules and will undertake a research project during the summer months.

Modules	Contents
Advanced Project Management	Takes the key aspects of project management to an advanced level, fully embracing complexity and uncertainty.
Funding for Projects	Addresses the current methods of financing major national and international projects, provides a review of funding practice and policy, review of relevant appraisal methods, public sector finance, private sector finance, concession contracts, UK Private Finance Initiative, allocation of risk and private finance in developing countries.
Procurement Management	Introduction to procurement management, alternative procurement strategies, partnering, client supply chain management and procurement, contracting strategies, procuring multi-projects and a programme of projects.
Project Management	Covers the major concepts of project management and the role of the project manager, appreciation of investment appraisal, risk techniques and planning techniques.
Risk Management	Covers risk management theory, risk management processes, Monte-Carlo simulation, risk registers and uncertainty and opportunity management.
Strategic Management in Construction	Addresses the strategic planning process, change, culture, organisational learning, international business strategy, alliances and joint ventures, international marketing and knowledge management.
Value Management	This module is a double weighted module and introduces value engineering (VE) and value management (VM) through its operation at the outline Sketch and Scheme/Schematic Design stages of a project. The concept of the client value system is introduced, the design of VM and VE studies and the approaches to teams and facilitation are explored.

This module list is an indicative list and actual content may vary as we regularly review the content of our courses in light of new experiences and developments in the field.

Research project

The research project is possibly one of the most satisfying parts of the course. It gives you the opportunity to take what you have learnt and to explore and develop specific interests by applying it to your own piece of research.

The project is chosen by you and is usually associated with one of our world-class research institutes. You will work individually on a project and you will be assigned a project supervisor.

Recent research projects:

- Uncertainty management
- Relational contracting and alliances
- Management of multiple projects
- Financing of public private partnerships

MSc Environmental Engineering and Project Management

This course provides consultants, operators, regulators and managers with the professional skills and training to contribute to the provision of environmentally sound and economically sustainable systems in the fields of clean water supply, wastewater treatment, and the management of solid waste, including wastes from the oil industry.

Environmental Engineering and Project Management is intended for those that find themselves in management positions with little knowledge or experience of the management techniques necessary to manage the range of projects for which they have responsibilities.

In addition, it is appropriate for people who have a background in management but feel that they lack up-to-date technical knowledge in the rapidly changing field of Environmental Engineering.

Who will benefit?

Graduates interested in providing engineering solutions to environmental problems facing the world. It is suitable for consultants, operators, regulators and managers and those wishing to develop their career within this field.



Key outcomes

Upon successful completion of the course you will have:

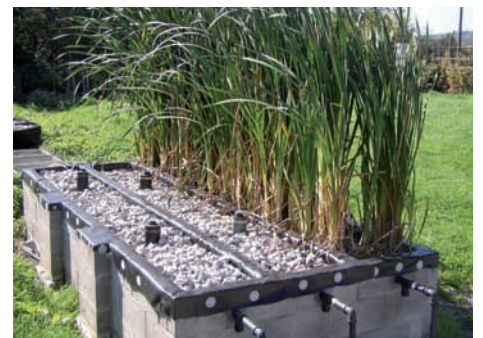
- An understanding of engineering approaches to achieving environmental improvement
- an awareness of best practice techniques for process design
- a better understanding of the specialist project management skills required in a global and multidisciplinary environmental engineering industry
- the ability to evaluate and apply new management skills in the workplace
- the ability to integrate and apply theoretical concepts, ideas, tools and techniques in practice.

Typical careers

Graduates from this course are in demand from a number of professions. Upon graduation you can expect opportunities from consulting and contracting engineers, water companies, utility companies and regulators as well as other environment-related companies.

Chartered Engineer status

This degree is accredited as meeting the requirements for Further Learning for a Chartered Engineer (CEng) for candidates who have already acquired an Accredited CEng (Partial) BEng (Hons) or an Accredited IEng (Full) BEng/BSc (Hons) undergraduate first degree.



Entry requirements

A degree equivalent to a UK second class honours (2:2) degree, or higher, in engineering or a related subject. Consideration will be given to applicants with equivalent academic or professional qualifications in an engineering or natural science subject. Given the nature of the course and the broad range of skills required by professionals working in these topic areas, students with degrees from other disciplines (e.g. social sciences, economics), and a proven track record in work, will also be considered.

For English language requirements see page 07.

Course content

You will study the following modules, all of which are taught through intensive teaching over periods of either one, two or four weeks. You will also undertake a research project during the summer months.

Modules	Contents
Advanced Water Engineering	Introduces the key components of a water supply system including what the key issues are in a water supply system, how to design and maintain a system and issues facing water supply systems in the future.
Environment and Health Management	Understand how legislation is applied to protect environment and health, the role of public health engineers in developing technologies to ensure legislative compliance and recognise organisms that have a major impact on our environment.
Integrated Water Resources Management	Covers water issues across the world including integrated water resources management, flood risk management, methods and tools for management and future developments.
Natural Wastewater Treatment and Reuse	Provides a strong base in low-cost technologies for delivering engineering solutions to sanitation, wastewater treatment and wastewater reuse in low-income countries, small communities and peri-urban areas.
The Management of Projects	Covers the major concepts of project management and the role of the project manager, projects appreciation of investment appraisal, risk techniques and planning techniques.
Wastewater and Organic Waste Management	Covers wastewater collection systems including EU urban wastewater treatment directive and freshwater fisheries directive, inlet works (screens, grit removal, FOG, flow measurement), design and operation of primary sedimentation tanks and the biological treatment in the activated sludge process.

This module list is an indicative list and actual content may vary as we regularly review the content of our courses in light of new experiences and developments in the field.

Research project

The research project is possibly one of the most satisfying parts of the course. It gives you the opportunity to take what you have learnt and to explore and develop specific interests by applying it to your own piece of research.

The project is chosen by you and is usually associated with one of our world-class research institutes. You will work individually on a project and you will be assigned a project supervisor.

Recent research projects:

- Potential impacts of climate change for wastewater treatment
- Membrane bioreactors for industrial applications
- The use of recycled glass in wastewater treatment
- Settlement of activated sludge and the influence of ballasted settlement aids
- Enhancing energy yields from organic wastes by simultaneous hydrogen and methane recovery
- Treatment options for oily wastes generated by the oil industry

MSc International Construction Management and Engineering

This course has been created to help construction professionals become more effective by developing and refining the generic and specialist project management skills required in the construction industry. It will prepare you for the challenges of a changing and dynamic global construction industry.

The course covers the construction process from inception and feasibility, design, contract and construction, through to commissioning and maintenance.

Particular emphasis is placed on the financial, planning and management aspects of the project life cycle. The flexible nature of the course offers you the opportunity to strengthen existing technical and engineering skills.

Who will benefit?

This course is designed to develop and enhance the skills of civil engineers and other construction professionals who are committed to developing and enhancing their project management skills.

Key outcomes

Upon successful completion of the course you will have:

- A better understanding of the specialist management skills required in a global and multidisciplinary construction industry
- a higher level of generic and transferable management skills
- the ability to evaluate and apply new management skills in the workplace
- the ability to integrate and apply theoretical concepts, ideas, tools and techniques in practice
- the opportunity to further develop the engineering skills needed for the construction industry.



Typical careers

The course is highly regarded within the construction industry and many graduates go on to take positions as construction managers. Opportunities also exist with multidisciplinary consulting organisations. Many of our graduates return to work for government agencies and other large client organisations, often in more senior roles.



Chartered Engineer status

This degree is accredited as meeting the requirements for Further Learning for a Chartered Engineer (CEng) for candidates who have already acquired an Accredited CEng (Partial) BEng (Hons) undergraduate first degree.

Entry requirements

A degree equivalent to a UK second class honours (2:2) degree, or higher, in civil engineering or a related subject. Industry experience is preferable. Consideration will be given to professionally qualified and experienced candidates without formal qualifications.

For English language requirements see page 07.

Course content

You will study the following modules plus three of the optional modules. You will also undertake a research project during the summer months.

Modules	Contents
Advanced Project Management	Takes the key aspects of project management to an advanced level, fully embracing complexity and uncertainty.
Applied Construction Management	An introduction to the UK construction industry. Covers environmental health, quality, health and safety, and supply chain management. Stakeholder relationships planning are also covered.
Procurement Management	Introduction to procurement management, alternative procurement strategies, partnering, client supply chain management and procurement, contracting strategies, procuring multi-projects and a programme of projects.
Project Management	Covers the major concepts of project management and the role of the project manager, appreciation of investment appraisal, risk techniques and planning techniques.
Whole Life Asset Management	The concept of whole life management (WLM) and best value are introduced in the context of infrastructure project management, procurement routes and the project chain value.

Optional modules

Design and Management of Structures in Earthquake Zones	Covers the fundamentals of structural dynamics and earthquake engineering, including finite elements in applied dynamics, application of engineering dynamics in practical engineering situations, evaluation criteria for earthquake damaged structures and current retrofitting methods.
Deterioration and Maintenance of Pavements	The highway network is a major economic asset of any country. This is an intensive four-day module, which is delivered largely by practising engineers. Includes the design of pavements, pavement materials, highway management, forms of deterioration and associated investigative techniques, repair and maintenance and strengthening of pavements.
Funding for Projects	Addresses the current methods of financing major national and international projects, provides a review of funding practice and policy, review of relevant appraisal methods, public sector finance, private sector finance, concession contracts, UK Private Finance Initiative, allocation of risk and private finance in developing countries.
Risk Management	Covers risk management theory, risk management processes, Monte-Carlo simulation, risk registers and uncertainty and opportunity management.
Strategic Management	Addresses the strategic planning process, change, culture, organisational learning, international business strategy, alliances and joint ventures, international marketing and knowledge management.
Value Management	This module is a double weighted module and introduces value engineering (VE) and value management (VM) through its operation at the outline Sketch and Scheme/Schematic Design stages of a project. The concept of the client value system is introduced, the design of VM and VE studies and the approaches to teams and facilitation are explored.

This module list is an indicative list and actual content may vary as we regularly review the content of our courses in light of new experiences and developments in the field.

Research project

The research project is possibly one of the most satisfying parts of the course. It gives you the opportunity to take what you have learnt and to explore and develop specific interests by applying it to your own piece of research.

The project is chosen by you and is usually associated with one of our world-class research institutes. You will work individually on a project and you will be assigned a project supervisor.

Recent research projects:

- New collaborative procurement systems
- Evaluation of international forms of contract
- International business strategy and globalisation
- International trends in value

MSc Structural Engineering

Structural engineering is at the heart of any developed or developing country. Virtually everything that you see in the modern world involves a structure of some shape or form.

These include a huge variety of buildings, bridges, railways, airports, water supply systems, water treatment plants, flood defence schemes, oil and gas process plants and power stations. Many examples of construction that remain from the ancient world are also fine examples of structural engineering.

Structural engineers help to make, shape and maintain the built environment. They are professionals who enjoy innovation, a challenge, opportunities, responsibility and excitement in a varied and very satisfying career.

Structural engineering is a profession that provides a tremendous opportunity to make a real difference to people's lives and their environment. This course is a unique collaborative venture between the School of Civil Engineering, local and regional industry and the Yorkshire Branch of the Institution of Structural Engineers (IStructE). Successful completion of the course satisfies some of the IStructE IPD requirements.



During this course you will use our heavy structures laboratory, which is the largest of its kind in the north of the UK with a capability for both static and dynamic loading of full scale structures.

You will also have access to our Institute for Resilient Infrastructure, which contains leading research groups in both Structural Engineering and Materials. The synergy that exists between these groups greatly enhances the delivery and understanding of the two areas. This synergy is paramount in the better understanding of structural behaviour.

Who will benefit?

This course is designed to provide qualified civil and structural engineers with the educational base required for Chartered Structural Engineer status.

Key outcomes

Upon successful completion of the course, You will have:

- In-depth, specialist knowledge of techniques relevant to the Structural Engineering discipline
- the ability to take a proactive and self-reflective role in working and to develop professional relationships with others
- the ability to proactively formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these
- the ability to critically and creatively evaluate current issues and research in the structural engineering discipline.

Typical careers

Upon completion of the course you will have greatly enhanced your ability to obtain status as a Chartered Structural Engineer. You may expect to find employment in the major structural engineering consulting practices. Opportunities also exist with multidisciplinary consulting organisations. If you are taking the course on a part-time basis, you will return to your existing jobs with enhanced potential for progression.

Chartered Engineer status

This degree is accredited as meeting the requirements for Further Learning for a Chartered Engineer (CEng) for candidates who have already acquired an Accredited CEng (Partial) BEng (Hons) or an Accredited IEng (Full) BEng/BSc (Hons) undergraduate first degree.

Entry requirements

Entry requirement for recent graduates

A degree equivalent to a UK upper second class honours (2:1) degree or higher in civil engineering or a related subject. Applicants are required to provide a statement detailing their experience in structural engineering including structural analysis, the design of reinforced concrete and steelwork structures and foundations.

Entry requirement for graduates with at least 3 years relevant work experience

A minimum of a degree equivalent to a UK second class honours (2:2) degree in civil engineering or a related subject, or associate membership of an appropriate professional engineering institution. Applicants are required to provide a statement detailing their experience in structural engineering, structural analysis, the design of reinforced concrete and steelwork structures and foundations.

For English language requirements see page 07.

Course content

You will study the following modules and will undertake a research project during the summer months.

In semester one the modules are taught over an 11-week period and are timetabled to allow attendance at the University on a 1 or 2 days per week basis. Semester two modules marked * are taught over a continuous 4-day period. In all cases, the teaching is reinforced by periods of directed study. In many of the modules the teaching is enhanced by specialist lectures delivered by practising engineers.

Modules	Contents
Advanced Concrete Design*	Covers alternative methods of design for reinforced concrete slabs and design guidance used in current codes of practice.
Advanced Steel and Composite Structures	Introduces the concept of advanced steel design and composite construction and their applications in engineering. Provides a basic means for design and analysis of steel and composite structures and familiarises students with a range of typical processing techniques.
Advanced Structural Analysis	Covers the latest developments, particularly the applications of computational methods in structural analysis. The review of fundamental principles of structural analysis will bring the students with various knowledge backgrounds to a common level.
Architectural Engineering Studies	Provides an appreciation and understanding of diverse aspects of engineering and architectural theory so that students can develop a pragmatic and accessible approach to design that goes beyond the narrow limits of the engineering and architectural professions.
Design and Management of Structures in Earthquake Zones*	Covers the fundamentals of structural dynamics and earthquake engineering, including finite elements in applied dynamics, application of engineering dynamics in practical engineering situations, evaluation criteria for earthquake damaged structures and current retrofitting methods.
Design Optimisation*	Provides an understanding of the scientific principles of design optimisation and the ability to arrive at an improved design for an engineering system that satisfies given requirements.
Foundation Engineering	Provides an understanding of the behaviour of soil to cover the range of foundations available for structures, including shallow and deep piles. Also covers the analysis and construction of foundations, with emphasis on finite element analysis. Soil improvement will also be covered.
Structural Engineering Practice	Provides an appreciation of the wider multidisciplinary context of structural engineering; including the social, environmental, ethical, economic and commercial factors and their impact on structural engineering. On completion of this module students should be able to demonstrate that they have satisfied the IStructE's Initial Professional Development core training objectives (at the 'Awareness' and 'Knowledge' levels) required for Chartered Structural Engineer status.

This module list is an indicative list and actual content may vary as we regularly review the content of our courses in light of new experiences and developments in the field.

Research project

The research project is possibly one of the most satisfying parts of the course. It gives you the opportunity to take what you have learnt and to explore and develop specific interests by applying it to your own piece of research.

The project is chosen by you and is usually associated with one of our world-class research institutes. You will work individually on a project and you will be assigned a project supervisor.

Recent research projects:

- Dynamic shear resistance of collar jointed masonry panels
- A computational study of the effect of spandrel wall connectivity on the behaviour of masonry arch bridges
- Progressive collapse of buildings under impact loads
- Dynamic performance of a structural T-joint

MSc Water, Sanitation and Health Engineering

This course will provide you with an in-depth understanding of the application of public health theory to engineering and development. It has a strong focus on the development of practical and policy skills for application in countries of the global south.

Particular emphasis is placed on developing your understanding of technical interventions in water supply, sanitation and solid waste management.

Research undertaken by our Pathogen Control Engineering Institute, which is world renowned for its pioneering work in developing countries, feeds directly into this course. The Institute undertakes research in all aspects of the built environment in which the presence of pathogens influences design, including water treatment, solid waste and airborne transmission of disease.

Staff teaching on this course have close working links with a number of key institutions in the field of international development including: UNICEF, the World Bank, the World Health Organisation, the Water Supply and Sanitation Collaborative Council, WaterAid, World Vision, the Bill and Melinda Gates Foundation and the African Development Bank.

This course is run in conjunction with the Nuffield Centre for International Health and Development, one of the UK's pre-eminent public health research centres.



Who will benefit?

The course will appeal to engineers who now wish to specialise in public health engineering and to professionals already working in the industry who wish to deepen their knowledge and expertise, enabling future career enhancement and development.

Key outcomes

Upon successful completion of the course you will have:

- An understanding of international public health theory and policy
- an appreciation of the context and practicalities involved in designing and delivering public health programmes in countries of the global south
- an understanding of engineering approaches to improve public health
- a better understanding of the specialist project management skills required in a global and multidisciplinary environmental engineering industry
- specialist technical knowledge and skills in water supply, sanitation and solid waste management
- the ability to integrate and apply theoretical concepts, ideas, tools and techniques in practice.



Photograph © Jema Sy

Typical careers

You will be equipped with a unique blend of civil engineering and public health policy skills and will be ideally placed to take up a senior position in public health ministries and public health departments in countries of the global south or work with international development agencies and international non-governmental organisations (NGOs).

Entry requirements

A degree equivalent to a UK second class honours (2:2) degree, or higher, in an engineering or public health related subject. Consideration will be given to professionally qualified and experienced candidates without formal qualifications.

For English language requirements see page 07.

Course content

You will study the following modules and undertake a research project during the summer months.

Modules	Contents
Advanced Water Engineering	Introduces the key components of a water supply system including what the key issues are in a water supply system, how to design and maintain a system and issues facing water supply systems in the future.
Engineering for Public Health	An introduction to the principles and practice of public health engineering, providing a bridge between the arena of public health policy and the practical application of engineering to improve public health. In addition it will explore historical and current trends in water supply, sanitation, wastewater and solid waste management and introduce key technologies and approaches.
Integrated Water Resources Management	Covers water issues across the world including integrated water resources management, flood risk management, methods and tools for management and future developments.
Key Issues in International Public Health	Provides an understanding of the key issues in international health. You will develop an understanding of the key players in international health, and of historical and current priorities. You will also explore key and emerging public health issues, and examine how these shape international and domestic health policy and practice.
Natural Wastewater Treatment and Reuse	Provides a strong base in low-cost technologies for delivering engineering solutions to sanitation, wastewater treatment and wastewater reuse in low-income countries, small communities and peri-urban areas.
Policy for Public Health and Development	Covers the current debates around health, equity and development. It also introduces critical perspectives and questions some of the ideologies and assumptions lying behind health policies and development approaches. Through an analysis of key health policy issues, the module explores the complex, messy and political world of health policy-making and planning.
Solid Waste Management	Provides an understanding of the characteristics of waste and its generation rates, waste collection including recycling, and the science and engineering aspects of landfill, biological treatment and thermal treatment options. On completion of this module you will also be able to produce outline designs for treatment plants and understand the operation and design of emission control systems for the various solid waste treatment options.

This module list is an indicative list and actual content may vary as we regularly review the content of our courses in light of new experiences and developments in the field.

Research project

The research project is possibly one of the most satisfying parts of the course. It gives you the opportunity to take what you have learnt and to explore and develop specific interests by applying it to your own piece of research.

The project is chosen by you and is usually associated with one of our world-class research institutes. You will work individually on a project and you will be assigned a project supervisor.

Recent research projects:

- Economic analysis of low-cost sanitation solutions in Soweto, South Africa (joint project with Johannesburg Water)
- Attitudes to reuse of urine and faeces from domestic sanitation (joint project with Swiss Technical Institute)
- Technical solutions to link domestic sanitation and food security in West Africa
- Differential access to water and sanitation by women-headed households in developing countries (joint project with UNICEF statistics division)

About the University

The University of Leeds is one of the UK's top universities. Our degrees are well respected by employers and universities worldwide; in the 2010 QS World University Rankings, our Employer Review score was 88%.

Established in 1904, we are part of the prestigious Russell Group – the 20 leading research universities in the UK. We are also in the top ten UK research intensive universities. We have performed consistently well in the National Student Survey, in fact, in the latest survey, 82% of students said they were very satisfied or satisfied with their experience at Leeds.

Our single-site campus is conveniently located, a short 10 minute walk to the city centre providing access to a vibrant city life and excellent local services and facilities.

We have more than 5,000 taught postgraduate students and 2,000 research postgraduate students. Students come from over 130 countries to make use of our outstanding facilities, including a major academic research library, laboratories and computing facilities.

Located at the heart of our campus, is our award-winning Students' Union which has over 31,000 members. It is an excellent University resource that hosts postgraduate networking events and provides specialist advice on a range of issues including academic support, housing, money and finances.

Our new £12 million gym and pool, The Edge is one of the biggest on any university campus. Featuring a 200-station fitness suite, squash courts, climbing wall, Starbucks café, steam room and sauna, plus much more, it has something for everyone. For more information visit www.leeds.ac.uk/sports



The diverse community of cultures studying and working within the University enriches the experience of studying at Leeds. We are committed to providing an excellent level of service and support for all our students and for international students we have extensive academic support services including a Language Centre and a Skills Centre.

The University of Leeds is one of the most popular destinations in the UK for high-quality international students. An active International Centre brings together the international student community and is a source of information, guidance and support, as well as a great place to make new friends. International students have a guaranteed place in University accommodation throughout their studies, provided that a completed application form and deposit reaches us before the summer deadlines.*For more information visit: www.leeds.ac.uk/international



*This guarantee applies to all single students from outside the EU.

About the city

Leeds is a fantastic place to live and learn; it's a multi-cultural and cosmopolitan city with over 200,000 students, all enjoying the safe, friendly environment.

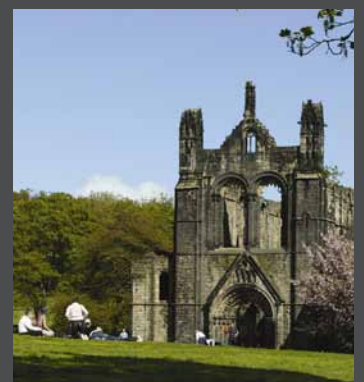
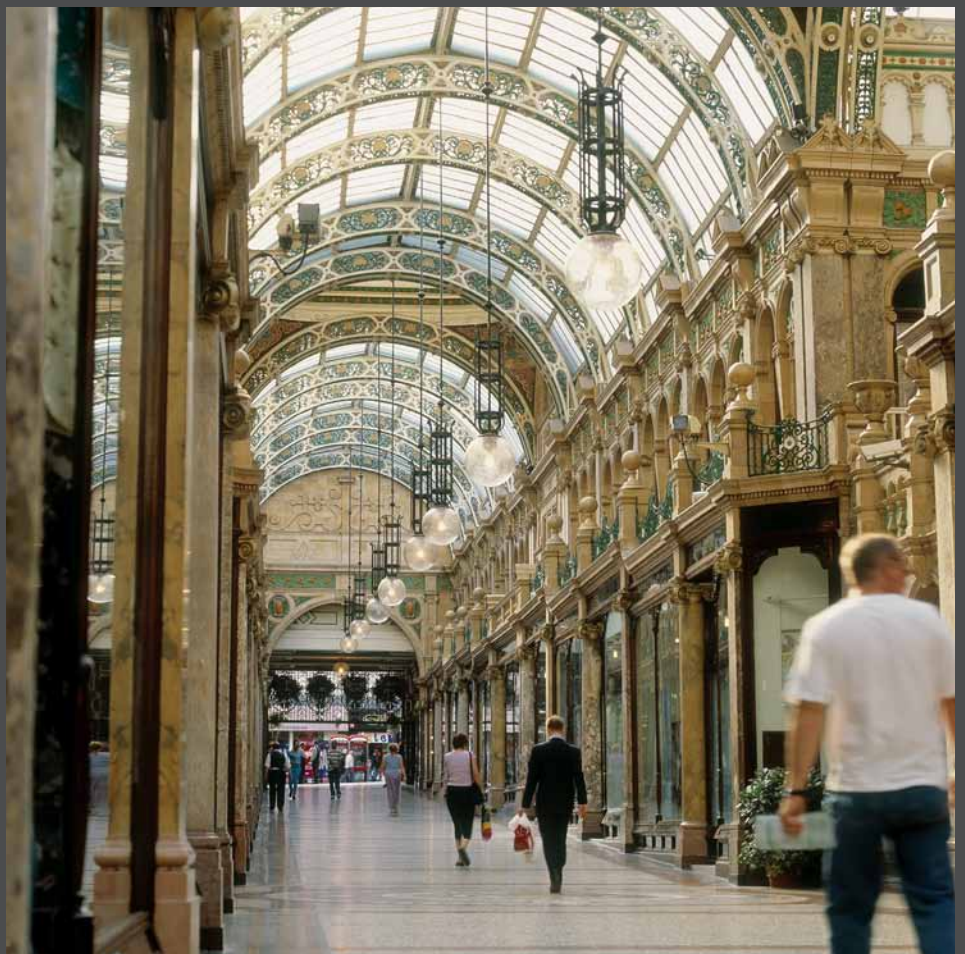
Leeds is renowned as a major shopping destination and centre for entertainment, nightlife, the arts and leisure. The city boasts over two miles of traffic-free shopping and beautiful Victorian and Edwardian arcades filled with shops of every kind. The city also offers an extensive choice of places to eat and drink whatever your culinary tastes or budgets. Nightlife in and around the city is known for its diversity and popularity, and offers a range of music to suit all tastes.

Leeds is one of the greenest cities in Britain with more parkland than any other European city. In and around Leeds you will find many areas of natural beauty and within easy reach of the city are the national parks of the Yorkshire Dales, Peak District, Lake District and historic towns such as York, Harrogate and Bradford.

Located at the heart of the UK, Leeds is midway between Edinburgh and London making it an ideal centre from which to visit other parts of the country. Leeds can be reached easily by train from any part of the UK, and is served by Leeds/Bradford International Airport, with train connections from Manchester and London International Airports.

Adapting to life in a new place can be both exciting and challenging. Finding somewhere to live where you feel comfortable will help you settle in quickly. Leeds has plenty of accommodation to choose from: residences large and small, in contemporary or traditional buildings, on campus or off campus. All of our accommodation is within easy walking distance to campus or on a frequent bus route. Living in University accommodation is one of the best ways to make new friends and help you settle into university life. For more information visit:

www.leeds.ac.uk/accommodation





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