

# Water Resources Technology and Management Masters/MSc/ Diploma

Please note: This course will not be recruiting for 2015/16

Postgraduate degree programme Water Resources Technology and Management Masters/MSc/ Diploma

This programme provides advanced training to engineers and scientists in order to develop their understanding of the activities involved in the optimal design and operation of water engineering systems.

This opens up the range of career opportunities available for specialists who understand the complex role of water in modern society, and can provide guidance to ensure optimum utilisation of this often scarce resource.

**Study here and find out why the University of Birmingham has been awarded The Times and The Sunday Times University of the Year 2013-14**  
<http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx>

## Course fact file

**Study Options:** Full time

**Duration:** 1 year full-time

**Start date:** September

## Related courses

[Civil Engineering postgraduate degree courses \(/schools/civil-engineering/postgraduate/index.aspx\)](/schools/civil-engineering/postgraduate/index.aspx)

[Taught postgraduate degree courses - School of Civil Engineering \(/schools/civil-engineering/postgraduate/taught-degrees.aspx\)](/schools/civil-engineering/postgraduate/taught-degrees.aspx)

[Postgraduate degree courses in Civil Engineering at Birmingham \(pdf 1 MB\) \(/Documents/college-eps/civil/brochure/postgraduate-courses-civil-engineering.pdf\)](/Documents/college-eps/civil/brochure/postgraduate-courses-civil-engineering.pdf)

## Contact

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[School of Civil Engineering \(/schools/civil-engineering/index.aspx\)](/schools/civil-engineering/index.aspx)

## Details



Topics are covered in sufficient detail to give confidence in applying them in real engineering situations.



**Mike Jesson**

MSc Water Resources Technology and Management (2008)



[\(/university/colleges/eps/postgraduate/student-profiles/mike-jesson.aspx\)](/university/colleges/eps/postgraduate/student-profiles/mike-jesson.aspx)

This programme recognises water as the world's most precious natural resource. It provides advanced training to engineers and scientists in order to develop their understanding of the activities involved in the optimal design and operation of water engineering systems. This opens up the range of career opportunities available for specialists who understand the complex role of water in modern society, and can provide guidance to ensure optimum utilisation of this often scarce resource.

The programme is intensive, and aims to develop your ability to think originally and produce innovative solutions to practical problems. The integrated approach to the water cycle and the use of modern management techniques both help to ensure that graduates of the programme can attain senior management positions in the water industry, both in the UK and overseas.

The syllabus covers:

- Water Quality Management
- Water and Wastewater Treatment
- River Flow Fundamental
- Hydrology
- Flooding and Water Resource Management
- Water and Environmental Management
- Pipeline Network Analysis
- Management and Research

**Related links:**

- [Civil Engineering postgraduate degree courses \(/schools/civil-engineering/postgraduate/index.aspx\)](/schools/civil-engineering/postgraduate/index.aspx)
- [Taught postgraduate degree courses - School of Civil Engineering \(/schools/civil-engineering/postgraduate/taught-degrees.aspx\)](/schools/civil-engineering/postgraduate/taught-degrees.aspx)

**Why study this course**

Why study at Birmingham? In short, we offer a well-established Masters Programme in Water that integrates scientific, engineering and management aspects of water quality and quantity in a single course.

“ Studying here is very interesting because the students here are very diverse, so you get to learn about other cultures. We get a very wide exposure to the [water] field that we are studying in and that is very important. **Demmo Darling, WRTM MSc graduate.**

This course is ideally suited to engineering graduates who want to work in the water industry and to science graduates wanting to add an engineering perspective to their qualifications. It is popular with geography, geology and environmental science graduates who want to work for the major engineering consultancies.

Students on this MSc are drawn from the UK, Europe and around the world, giving a vibrant mix of cultures and experience that adds to the learning experience. In recent years, students from Bangladesh, Barbados, Chile, China, France, Ghana, Lebanon, Mexico, Pakistan, Spain and the UK have attended the course.

**What our students say:**

“ I would firmly recommend this course to any graduate who is seeking a career in the water industry. Paul Jenkin (Partner) Peter Brett Associates

“ Studying here is very interesting because the students here are very diverse, so you get to learn about other cultures. We get a very wide exposure to the [water] field that we are studying in and that is very important. Demmo Darling, WRTM MSc graduate.

“ The course gave me a good grounding in the water industry but particularly in river hydrology and hydraulics. I really enjoyed the course and also recognise the quality of those who graduate. Over the years I have employed about a dozen graduates from the MSc, some of which remain with me, some of which have moved on to other challenges, all have been very successful. Paul Jenkin, Partner, Peter Brett Associates (WRTM MSc graduate).

“ This course gave me a wider understanding of environmental issues, which then allowed me to specialise in wastewater treatment. However, the course also gave me management skills that have progressed my career from being technical at Year 0 to dealing with strategic company business plans just 5 years after graduating. Simon Brown, Operation Leader (COSC) Severn Trent Water (WRTM MSc graduate).

“ I found the course challenging but very rewarding. It was varied enough to cover most aspects of the water industry, yet technically detailed to enable you to specialise in your chosen career. I would not have been able to get my current job without the good grounding of the WRTM MSc. Tim Smith, Senior Network Modeller, Hyder Consulting (WRTM MSc graduate).

“ The breadth and depth of the WRTM MSc provided me with a good understanding of general issues in the water industry and kick started my career in academia. Without this course I would not be able to lecture or research in my current area of interest. Jen Smith, RCUK Academic Fellow, Cranfield University, Centre Water Sciences (WRTM MSc graduate).

“ I thoroughly enjoyed my time at Birmingham both socially and academically. The MSc in Water Resources and Technology was challenging but enjoyable and enabled me to pursue my subsequent PhD. The course gave me a diverse and thorough grounding understanding of the water industry and the confidence to undertake the engineering challenges I was to face as a process engineer. The depth and diversity of the course provides graduates with the knowledge to pursue opportunities across the water industry. Ben Courtis, Technical Specialist (Process), Tankersley UK (WRTM MSc graduate)

“ I liked the water treatment design project as it helped us to learn the principles behind water treatment processes. The site visits were relevant and helped me to visualise the treatment processes. Student feedback on the Water Quality module.

“ Over the years we have worked with this MSc Course on a variety of R&D projects and it is a relationship I value. Peter Vale, Wastewater Strategy, Severn Trent Water.

“ The lecturers allow the students to develop themselves – they don't do the work for you, they'll guide you and give you the opportunity to get something done for yourself. I think that's very good. Demmo Darling, WRTM MSc graduate.

**Modules**

**Course objectives**



Tackling flooding worldwide is an issue that is going to be increasingly problematic as the climate changes.

The Water Resources Technology and Management MSc programme is an intensive course that aims to develop students that can think originally and produce innovative solutions to practical problems.



Unlike many other courses, our integrated approach to the water cycle produces graduates who can work in water companies, government departments, consultants and contractors.

The course covers conditions and techniques which are appropriate for both developed and developing countries, an important point since many employers have international activities.

### Modules (and credits)

- Water and Wastewater Treatment (20)
- Flooding & Water Resources Management (20)
- Hydrology (10)
- Pipeline Network Analysis (10)
- River Flow Fundamentals (10)
- Project Management (10)
- Research Project (60)
- Groundwater (10)
- Research Skills (10)
- Water and Wastewater Design (10)
- Water and Environmental Management (10)

### Assessment

- The taught courses are generally examined by a series of coursework and written examinations in January and May.
- Each student is required to submit a thesis on his or her individual project at the end of the academic year in September followed by an oral examination (viva).

### Fees and funding

#### Tuition fees for home/EU students (2015/2016)

##### Full-time fees

Postgraduate Masters	£6,840
Postgraduate Diploma	£4,560

#### Part-time programmes

Most part-time programmes run for two years and their fees are one half of the standard full-time programme fees.

#### Tuition fees for international students (2015/2016)

International student tuition fees are set at **£17,960**.

For further information please view the [fees for international students \(http://www.birmingham.ac.uk/international/students/finance/fees.aspx\)](http://www.birmingham.ac.uk/international/students/finance/fees.aspx) page.

#### Part-time programmes

UK student visa regulations mean that students classed as overseas for fees purposes may normally only register on a full-time basis.

### Further funding information

[Standard fees \(/postgraduate/pgt-fees/fees.aspx\)](http://www.birmingham.ac.uk/postgraduate/pgt-fees/fees.aspx) apply

Learn more about [fees and funding \(/postgraduate/pgt-fees/index.aspx\)](http://www.birmingham.ac.uk/postgraduate/pgt-fees/index.aspx)

#### Scholarships and studentships

Scholarships may be available. International students can often gain funding through overseas research scholarships, Commonwealth scholarships or their home government.

For further information contact the School directly or email [sfo@contacts.bham.ac.uk \(mailto:sfo@contacts.bham.ac.uk\)](mailto:sfo@contacts.bham.ac.uk)

### Entry requirements

The basic requirement is a good Honours degree in an appropriate discipline (for example, Engineering, Sciences, Geology, Geography or Mathematics) and evidence of adequate knowledge of English. However, practical experience may also be an important consideration.

Learn more about [entry requirements \(http://www.birmingham.ac.uk/students/pg/requirements\)](http://www.birmingham.ac.uk/students/pg/requirements)

#### International students

We accept a range of qualifications from different countries – learn more about [international entry requirements \(http://www.birmingham.ac.uk/students/pg/requirements/international\)](http://www.birmingham.ac.uk/students/pg/requirements/international)

[Standard English language requirements \(/postgraduate/requirements-pgt/international/index.aspx\)](http://www.birmingham.ac.uk/postgraduate/requirements-pgt/international/index.aspx) apply

## How to apply

Learn more about [applying \(/postgraduate/courses/apply-pg/index.aspx\)](http://www.apply.bham.ac.uk/postgraduate/courses/apply-pg/index.aspx)  
[www.apply.bham.ac.uk](http://www.apply.bham.ac.uk) (<http://www.apply.bham.ac.uk/>)

### Related links

[Civil Engineering postgraduate degree courses \(/schools/civil-engineering/postgraduate/index.aspx\)](http://www.apply.bham.ac.uk/schools/civil-engineering/postgraduate/index.aspx)

[Taught postgraduate degree courses - School of Civil Engineering \(/schools/civil-engineering/postgraduate/taught-degrees.aspx\)](http://www.apply.bham.ac.uk/schools/civil-engineering/postgraduate/taught-degrees.aspx)

### Related news and events

[Planning for water supply: learning from historical approaches \(/schools/civil-engineering/news/archive/water-supply.aspx\)](http://www.apply.bham.ac.uk/schools/civil-engineering/news/archive/water-supply.aspx)

[Research news: Dr N Metje grant award \(/schools/civil-engineering/news/archive/metje-award.aspx\)](http://www.apply.bham.ac.uk/schools/civil-engineering/news/archive/metje-award.aspx)

[What have cows got to do with waste water quality? \(/schools/civil-engineering/news/archive/waste-water-quality.aspx\)](http://www.apply.bham.ac.uk/schools/civil-engineering/news/archive/waste-water-quality.aspx)

[The William E Lardner Award in Civil Engineering \(/schools/civil-engineering/news/william-lardner-award.aspx\)](http://www.apply.bham.ac.uk/schools/civil-engineering/news/william-lardner-award.aspx)

## Learning and teaching

### Highlights of the WRTM MSc Programme

#### Semester 1

- Take part in a river gauging exercise in the countryside to the west of Birmingham.
- Visit a water treatment works and storage reservoir and use this practical experience to plan your water design project.
- Visit a wastewater treatment works to see how theory relates to practice and view examples of all major treatment processes plus renewable energy generation by combined heat and power.
- Learn through enquiry by taking part in a group project to design a water treatment works for various surface water and underground water abstraction scenarios.



I liked the water treatment design project as it helped us to learn the principles behind water treatment processes. The site visits were relevant and helped me to visualise the treatment processes. **Student feedback on the Water Quality module.** academic session

#### Semester 2

- As part of a team, tackle a current problem from the Water Industry, working with our industrial partners to get a flavour of what it is like to work as a project consultant.
- Debate topical water management issues with fellow students and invited speakers from industry.
- Learn how to use software models currently used in the water industry and complete an individual project using one of these models.

#### Semester 3

- Tackling flooding worldwide is an issue that is going to be increasingly problematic as the climate changes.
- Spend three months either placed in industry or based at the University, to do a challenging individual research project that allows you to specialise in a particular area of the course.



Over the years we have worked with this MSc Course on a variety of R&D projects and it is a relationship I value. **Peter Vale, Wastewater Strategy, Severn Trent Water.**



River flow measurement using an acoustic Doppler current profiler.

### Related staff

[Dr Xiaonan Tang \(/staff/profiles/civil/tang-xiaonan.aspx\)](http://www.apply.bham.ac.uk/staff/profiles/civil/tang-xiaonan.aspx)



I was initially attracted [to the course] by the broad curriculum and also the passion of the lecturers that I met.



[/university/colleges/eps/postgraduate/student-profiles/paul-jenkin.aspx](http://university/colleges/eps/postgraduate/student-profiles/paul-jenkin.aspx)

Our graduates are very successful in finding employment with a wide range of water-related employers. Recent graduates who looked for work in the UK were snapped up by:

**Paul Jenkin**

MSc Water Resources Technology and Management , 1994



Atkins	MWH	The Met Office
Halcrow	Royal Haskoning	The University of Birmingham (Doctoral Research Students)
British Waterways	AECOM	Hyder Consulting
Cranfield University	Jeremy Benn Associates	The Drinking Water Inspectorate
Entec UK	SevernTrent Water	Peter Brett Associates
OFWAT	ThamesWater	
Mott McDonald	United Utilities	
Mouchel	The Environment Agency	

**University Careers Network**

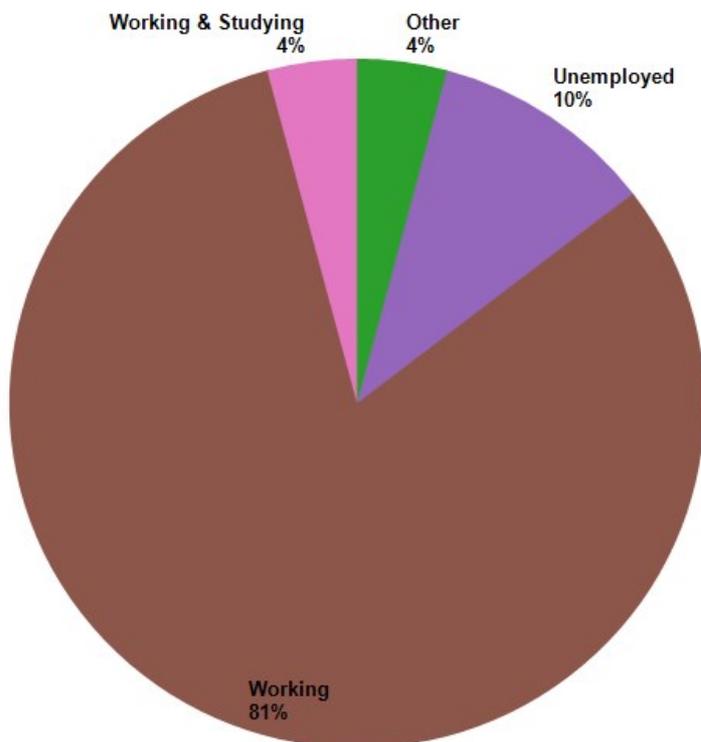
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you achieve your goal.

Our unique careers guidance service is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Our team source exclusive work experience opportunities to help you stand out amongst the competition, with mentoring, global internships and placements available to you. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge.

If you make the most of the **wide range of services** (<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx>) you will be able to develop your career from the moment you arrive.

**Destinations of Leavers from Higher Education (DLHE) 2011/12 (postgraduate taught graduates)**

The DLHE survey is conducted 6 months after graduation.



**Examples of employers**

- AECOM
- Amey
- Arup
- Atkins
- British Army
- Hyder Consulting
- Interserve
- Laing O'Rourke
- Mouchel
- Network Rail

**Examples of occupations**

- Assistant Civil Engineer
- Consultant Engineer
- Graduate Bridge Engineer
- Graduate Leader
- Graduate Site Engineer
- Graduate Tunnelling Engineer
- Officer Cadet
- Site Engineer
- Structural Engineer
- Water Engineer

**Further study - examples of courses**

- MRes Materials and Sustainable Technology

- MRes Science and Engineering of Materials
- MSc Computer Science
- MSc Construction Management
- MSc Environmental Technology
- MSc Railway Systems Engineering and Integration
- MSc Road Engineering and Management
- PhD Civil Engineering

Visit the **Careers section of the University website** (<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps.aspx>) for further information.

## Professional accreditation

The MSc version of 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.

See [www.jbm.org.uk](http://www.jbm.org.uk) (<http://www.jbm.org.uk>) for further information

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