



MSc Temporary Works and Construction Method Engineering

Duration

Full-time: one year.

Part-time: two years.

Course overview

The **MSc in Temporary Works and Construction Method Engineering** is the first and only of its kind in the UK, which provides a specialist qualification for those involved in the design and construction of temporary works and addresses industry need for such a professional qualification.

The Temporary Works Forum (TWF), which promotes best practice within the UK construction industry*, has designated City University London as a Centre of Excellence in Temporary Works and Construction Method Engineering and collaborated in the development and delivery of this new masters.

Temporary works refers to works enabling the construction of, protection, support or provision of access to permanent works which might or might not remain in place at the completion of a construction project. In contrast with permanent works, where catastrophic failures are rare, there are regularly failures of temporary works. Consequently, this specialist area is often regarded as high-risk.

Industry experts will contribute to the delivery of the course, providing insights into current practice in temporary works alongside academic members of staff experienced in the theory underlying the design methods employed.

Is the programme right for you?

This MSc degree is aimed at graduates with at least two years of practical experience in construction; however, more recent graduates with a good appreciation of construction processes will also benefit.

To accommodate those who wish to take the MSc part time the course has been designed so that it can be taken over 2 years by attending the University for just one day a week.



Entry requirements

Applicants for this course should hold a first 2:1 honours degree in Civil Engineering or a relevant subject. Alternative qualifications combined with relevant experience may also be considered.

International students:
Applicants whose first language is not English will require IELTS 6.5 in all categories.

What will you study?

The course addresses the regulatory background to temporary works for construction, the design of geotechnical, structural and marine temporary works, demolition, plant, safe working methods and access works. You will gain both the technical understanding to undertake safe but cost-effective designs for a full range of temporary works and a good understanding of the wide range of plant and techniques that can be employed.

The course consists of eight taught modules and a project. The project is a major individual research exercise on a topic relevant to temporary works and construction method engineering. Members of the Temporary Works Forum have offered to support research projects by providing topics and relevant data, or you may wish to research a problem you have encountered at work.

Normally, these industry relevant projects will be supported by two supervisors, one academic from the University and one from the industry collaborator. They will support you to produce the main outcome of the project which is a written report (dissertation).

Taught modules address the following topics:

- An introduction that provides background and context for the MSc and enables students to appreciate the special conditions that impose onerous responsibilities on those involved with

temporary works to ensure that risks are effectively managed.

- The structural design of systems or components that would be used to provide temporary support or access to the final permanent works before it is complete and hence unable to properly support itself. You will learn about the alternative methods of design that are used across a wide variety of materials as well as determining the loads that act upon the temporary works.
- The structural design of the final permanent works in its temporary state before it is complete and hence unable to properly support itself, for example, the stability of reinforcement before concreting and the deformation and stability of building cores as their height increases.
- Understanding the behaviour of geotechnical structures during temporary works and the design of geotechnical temporary works using codes of practice having critically evaluated the analytical methods and soil parameters required to ensure safe construction.
- The practical knowledge and technical skills necessary to design ground water control systems for use in temporary works applications. The environmental context to groundwater control, the need for monitoring and how to interpret the results of monitoring.
- The problems of devising temporary works in marine environments where it is necessary to take account of working in and over water and where accommodating tides and environmental loads from waves and wind may be critical to the success of the works.
- The regulatory requirements that you will be obliged to follow during planning, assessment and completion of work that involves either partial or complete demolition of an existing structure. How to assess the risks and dangers involved as well as the various methods of assessing structures and carrying out the work that are currently available.
- How to devise temporary works for plant and access problems especially where it is necessary to take account of possibly unusual conditions that may be critical to the success of the works. The particular requirements for specific plant and access systems and health and safety issues.

Learning and assessment

The learning and teaching approach for the course uses a variety of methods including: lectures, workshops, group work, case studies, forensic reviews, technology-supported learning, presentations and design studies.

These methods will be used to build your ability to critically review and assess options for design and assessment of temporary works. There may be site visits, practical demonstrations in the laboratory and the use of video to enhance your appreciation of the practical challenges of temporary works.

Your learning will be supported by the online learning environment Moodle, which will provide resources for independent learning, such as further reading, links to wider sources of information and quizzes for self-assessment.

All modules involve undertaking a certain number of individual and/or group assignments (coursework) during the teaching terms, as well as comprehensive final examinations.

Career opportunities

Temporary works are an important aspect of most construction projects. Consequently, a qualification in this field will have widespread application across all civil engineering disciplines, whether you are working as an on-site engineer or as a design office engineer. You could also go into the research arena conducting innovative research in the area of temporary works

The course will provide specialist skills and knowledge necessary to enable those who already have a good understanding of engineering principles to appreciate the particular and often unusual challenges posed by temporary works and produce robust design solutions that enable safe, economic and sustainable construction.

How to apply

We recommend early applications for overseas applicants to allow time to obtain the required student visa.

For more information and to apply please contact:

Programmes office
T: +44 (0)20 7040 0248
E: smcsepg@city.ac.uk

Academic profile

Dr Andrew McNamara



Andrew McNamara is the Director of the City University London Centre of Excellence in Temporary Works and Construction Method Engineering sponsored by the Temporary Works forum. He has been an academic at City University London for 15 years and has more than 30 years' experience as a practicing engineer specialising in temporary works for urban construction.

He was a member of the winning team for the Fleming Award in 2004, awarded for excellence in geotechnical design and construction in recognition of work on the Moorhouse draught relief shaft for Crossrail. In 2005 he was awarded a Diploma of the Henry Adams Award, jointly with Professor RN Taylor, by the Institution of Structural Engineers for a paper on his doctoral work and also a Telford Prize, jointly with Dr PRJ Morrison and Dr TOL Roberts by the Institution of Civil Engineers for a paper on the design and construction of a deep shaft for Crossrail.

He leads the Research Group for Multiscale Geotechnical Engineering and City University London and is currently chair of the ISSMGE technical committee TC104 for Physical Modelling in Geotechnics.

Find out more

Open evenings:

We regularly host open evenings for students interested in postgraduate study. This is a great opportunity for you to visit the campus, meet our academic staff and find out more about what City and our courses have to offer.

If you are unable to attend any of our open evenings, you can register with City's Postgraduate Virtual Fair, which allows you to learn more about postgraduate study at City from the comfort of your own home.

For further information, visit www.city.ac.uk/pg-open-days