Nottingham Trent University Course Specification

	Basic Course Information	
1.	Awarding Institution:	Nottingham Trent University
2.	School/Campus:	School of Architecture, Design and the Built Environment (ADBE) / City
3.	Final Award, Course Title and Modes of Study:	MSc Civil Engineering FT/PT
4.	Normal Duration:	Full Time = 1 year; Part Time = 2 years
5.	UCAS Code:	

6. Overview and general educational aims of the course

The MSc in Civil Engineering is designed to enhance the technical skills of graduates and experienced personnel who work in construction-related industries. It is designed to appeal to you if you are working in the broad civil engineering industry and aspire to a senior management position.

This course of technical and management based modules is organised in such a way as to minimise the conflict of interests between study and employment commitments. The course concentrates on the civil engineering, structural and management aspects of construction as well as environmental problems affecting construction projects.

The course, which runs in full and part time modes, involves some learning at home as well as periods of attendance for lectures.

Subject to accreditation by the Joint Board of Moderators of the Engineering Council (JBM), the course will provide opportunities for further learning to meet the educational base for Chartered Engineer. This course is suited to you if you have previously obtained a UK accredited BEng (Hons) or BSc (Hons) e.g. in Civil Engineering which is recognised as part of the educational base necessary to become a Chartered Engineer.

This course aims to give you the ability to develop and extend your research methods necessary to enable you to apply your knowledge and understanding of the continually changing issues related to civil engineering and management. You will gain awareness, understanding of and competence in the design, management and construction of civil engineering infrastructure. You will work flexibly by using study guides. Providing you have the appropriate entry qualifications this course also aims to give you the necessary education and qualifications to meet the Engineering Council's Matching Section criteria.

On the course you should be exposed to industry and visiting academic experts who will be teaching parts of some of the modules.

If you are a part-time student you will find that the course's flexible structure enables you to take some of the modules at weekends. If you prefer, you could also take these modules on weekdays.

There are study guides which contain comprehensive learning materials. You will study a management-related module on this course alongside students of other construction based disciplines. You have the choice of two entry points per year to provide flexible learning opportunities.

7. **Course outcomes**

Course outcomes describe what you should know and be able to do by the end of your course if you take advantage of the opportunities for learning that we provide.

Knowledge and understanding

By the end of the course you should be able to:

Comprehensively explain and critique engineering principles used in civil engineering.

Produce computer based models to systematically assess civil engineering problems and challenges and understand their limitations.

Appraise the design and construction processes across a range of themes and adapt techniques and novel solutions to the applications under investigation.

Constructively evaluate to improve health and safety issues as they relate to civil engineering and construction practice.

Explain and debate with technical and policy based evidence, complex sustainability and environmental issues related to civil engineering and construction and develop strategies and procedures which take them into account.

Critically evaluate and apply management, legal and business principles and practices in a range of civil engineering contexts.

Identify and astutely assess risks and apply risk assessment and mitigation strategies and techniques in a range of civil engineering contexts.

Display a critical awareness of the accuracies, limitations and other implications of using particular investigation methods in civil engineering.

These outcomes have specific reference to the Subject benchmark statement Engineering 2015 as well as Accreditation of Higher Education Programmes: UK Standard for Professional Engineering Competence 2015

Skills, qualities and attributes

By the end of the course you should be able to:

Integrate knowledge of mathematics, science, information technology, design, business context and engineering practice and apply to novel and challenging situations to solve a substantial range of problems

Assess the capabilities and limitations of computer based methods for problem solving, have a systematic understanding of the future development of IT tools, and formulate and anticipate engineering needs .

Investigate from available civil engineering data that is pertinent to an unfamiliar problem, interpret, analyse and suggest solutions.

Argue efficiently and effectively by critical appraisal of published information, by analysis of results of an investigation and presentation of outcomes.

Critically evaluate management techniques taking account of a range of commercial and industrial constraints applicable to both the overall process of project management and to the specific stages within that process.

Develop innovative design for systems, components or processes to fulfil new needs in an engineering context.

Critically evaluate fundamental knowledge in the investigation of new and emerging technologies and/or management systems.

Appraise and devise new methods required for novel situations and adapt to specific purposes if necessary.

These outcomes have specific reference to the Subject benchmark statement Engineering 2015 as well as Accreditation of Higher Education Programmes: UK Standard for Professional Engineering Competence 2015

8. Teaching and Learning Methods

A wide range of teaching and learning methods are employed. In most modules the teaching and learning centres on intensive sessions of key point lectures supported by study guides and other literature. The study guides are provided before the module is delivered so that you can "read in" to the subject material to gain maximum benefit from the lectures.

Each module is unique. Some are delivered by one member of staff and some by a team. Many modules include presentations by external industry specialists to give a "real life" perspective on the topics you study. This helps to bind together both the theoretical and practical elements of civil engineering and management. Some modules include laboratory investigations and/or computer applications.

In association with other material, such as text books, technical papers and references to the internet, the study guide will typically comprise: a module programme, definitive notes, guide on the use of other material, tasks, model answers, self-assessment questions, preparatory material for examinations, and feedback questionnaires. You will be provided with the relevant and appropriate learning materials to support your studies for the duration of the course .

You will also be supported in developing employability skills by introducing you to the employability team and associated support and resources within NTU. This will be useful especially if you have never worked in the industry or you are an international student.

9.	**Assessment Methods**

Assessment will be based on the University Common Assessment Regulations for Taught Postgraduate Courses – Quality Handbook 16C
https://www4.ntu.ac.uk/adq/quality_handbook/handbook_sections/index.html

All course outcomes are assessed but not necessarily in every module. Your assessments within a module will be based upon the learning outcomes of that module.

Assignments and case studies form a significant part of the assessment process and are often the most appropriate way of assessing the higher-level learning outcomes associated with this course. They are particularly appropriate where skills to apply principles and techniques must be demonstrated. These methods help you develop an understanding of research processes during the taught modules which are developed in the Research Project/Dissertation module.

The role of 'traditional' examinations in assessing the learning outcomes is limited but they are most appropriate for assessing specific module learning outcomes under time-restrained conditions.

Preliminary questions are often issued prior to attending the initial lectures and workshops. You can assess your own understanding and learning of specified topics and you will be able to raise any issues for clarification with the Module Leader either prior to or during the lecture sessions. Preliminary Questions typically include a set of short-answer questions designed to reinforce the pre-reading of the learning material.

Learning portfolios contain evidence of your learning and typically might include: a study log showing the time spent on various activities related to the module: answers to self-assessment questions; small projects covering module learning outcomes not assessed in the other methods selected for the module; notes and critical reviews made whilst reading papers; articles, texts or readers together with identified queries to be raised with lecturers.

Assignments may be essays, case studies, reports and designs. They will be investigative in nature, testing understanding and application rather than just knowledge and will enable you to: develop principles; analyse, critically appraise and evaluate relevant issues; and to demonstrate creativity and sustainable thinking. Each module will have at least one major assignment where you can demonstrate your intellectual qualities, practical and personal skills as well as your understanding, application and development of module content.

Examinations assess outcomes under time-constrained conditions and so enable you to demonstrate that you have the academic competencies and intellectual skills required at master's level.

The Research Project/Dissertation is assessed through a written submission.

The assessment type and methods used vary for each taught module depending on

the requirements, content and learning outcomes of the module.

10. Course structure and curriculum

The course recruits both local and international students. Though the course by its very nature, relies heavily upon the British and European codes and practices, there are various opportunities to explore global issues such as through the research project, lean construction and contemporary themes modules. The course does provide opportunities for international and intercultural learning using our international staff and their global experience.

Grounded through Professional, Statutory and Regulatory Bodies' (PSRB) requirements, the course focuses on the theme of engineering for sustainability. There is an embedded theme of sustainability and innovation in design and construction taking into account economic efficiency. The course facilitates and supports dialogue and debate on critical issues related to global social responsibility within the wider sustainability agenda, fostering respect for different values and world views.

The course allows students to explore other disciplines interconnected with the course such as Energy, Manufacturing and other industries.

The course is studied in a full time or part time mode.
Full time study will take 1 – 2 years and part time study 2 - 5 years.

Attendance will be by a combination of two different modes:

Midweek delivery. Up to 2 days a week for 13 weeks for modules which are delivered on a weekly basis. These modules will be run in parallel.

Weekend delivery. Some modules might be delivered over the weekends. These modules will be delivered consecutively with a reasonable gap between successive weekend-delivered modules. These modules will be delivered in parallel with the midweek delivered modules.

The taught modules if delivered at weekends in one year will be delivered midweek the following year, and vice-versa.

This mixed mode of delivery will allow part time students, overall, to take most of their modules at weekends because different modules will be delivered at weekends in different years. From our experience weekend delivery is very popular with employers.

The Research Project/Dissertation module will be studied over 40 weeks in full time study and one year and 40 weeks in part time study.

The course is modular and comprises eight taught modules including the Research Project/Dissertation. Each module carries 15 credit points, except the *Dissertation* module and *Professional Practice and Procedure for Construction and Engineering Management* module which carry 60 and 30 credits respectively.

*Research Project / Dissertation (60 credit points)

Current practices in Civil Engineering (15 credit points)

Advanced Structural Engineering (15 credit points)

Advanced Hydraulics & Hydrology (15 credit points)

Sustainable Transport Planning and Engineering (15 credit points)

* Professional Practice and Procedure for Construction and Engineering Management (30 credit points)

* Advanced Construction Materials (15 credit points)

Geophysical and Geotechnical Investigation and Design (15 credit points)

* These modules are shared with other courses in ADBE.

11. Admission to the course

For current information about admissions requirements, please see the information on the 'How to Apply' tab.

12. Support for Learning

At this University you will have full access to all student support services.

The University's online workspace / virtual learning environment (NOW) will be used to support the course's studies.

There is an induction programme including IT and library use where you will receive a course handbook that provides all of the essential information about the course and the support provided.

Most staff teaching on the course are members of one or more professional institutions applicable to civil engineering. Most staff participate in industrial activities, consultancy, research and/or the activities of their professional institutions.

The course leader oversees all students enrolled on the course and with the course administrator is easily contactable in person, by phone or by email. The induction activities are aimed at developing your understanding of the intellectual rigour and high quality outputs expected at this level. You will be supported through discussions with the course manager and module leaders to achieve these.

During induction, a range of activities are planned to ensure that you develop positive relationship with your peers. Some modules require you to work in groups. You will have opportunities to participate in social events which may be arranged by the international office and the students' union. For other postgraduate programme in structural engineering, student representatives have set up a dedicated Facebook page to encourage student feedback and community support.

You will undertake a research project and will be encouraged to start work at the beginning of your course that allows you to engage with a supervisor in research discussions and make you see yourself as a stakeholder in the world of university research as well as a member of an inter-disciplinary research community.

You will be supported to develop skills to enquire, investigate, analyse and think critically. Research discussions are also effective means to learn about the methods used in research studies. You will be supported to develop an understanding of ethics and ethical approaches while developing your research projects and through membership of professional bodies.

The current teaching staff and the staff supervising research projects are experts in their research field allowing them to penetrate the topic to some depth and research-led teaching will provide you with this experience.

The course team is keen to develop stronger staff-student research building on some recent examples.

We are currently developing a pilot (one of four universities in the country) with the ICE to encourage greater interaction between students and the PSRB.

Students develop extensive IT skills and literacies appropriate to the discipline as an integrated part of the course.

The students are made aware of volunteering opportunities. Some of our alumni deliver talks on specialist areas.

Most staff teaching on the course are members of one or more professional institutions applicable to civil engineering. Most staff participate in industrial activities, consultancy, research and/or the activities of their professional institutions. This ensures that you would benefit from current practices and approaches in the industry.

The library and other learning resources are continually updated to ensure they are fit for purpose.

The University central Student Support Services offers a range of general, specialist and professional support services for students.

Whilst offering many advantages to employers and employees, one major challenge of part-time study can be procrastination and the need to belong to and engage with the course community. Within the structure of the MSc course a system of peerand lecturer support has been developed. This support mechanism is also fully available to full time students.

Module Leaders

You are encouraged to contact Module Leaders directly. Your queries can be submitted by telephone, fax, mail, or e-mail.

Peer Support

At the start of each year the Course Administrator will, with your permission, circulate the telephone/fax/e-mail details of all students on the course to encourage the formation of self-support groups.

Module Programme

Each module study guide includes contact details for the Module Leaders. In addition and to help you manage your time effectively, Module Leaders will include a delivery plan which will set targets for the duration of the module.

13. Graduate destinations / employability

This course is designed to appeal to you if you are working in the broad civil engineering, architectural and construction industries and aspire to a more senior positions in design practice and\or in management. This course will appeal to you if you seek to progress your career by satisfying the educational requirements necessary for advancement to Chartered Engineer status as accredited by the JBM (for the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStructE) and the Institution of Highways and Transportation (IHT)). You should have much improved prospects in gaining employment with major structural engineering consulting practices or contractors.

If you are a part time student you are likely to continue with your current employer in current or more senior positions and with better prospects to move on.

If you are a full time student you would be expected to find employment in civil engineering and construction whether in civil engineering or architectural practices or contracting organisations at middle/senior management positions.

At the end of your studies on this course you may wish to continue your academic study by undertaking a research degree course such as a PhD. You will be able to progress in a variety of research roles as students on similar programmes in civil engineering area have done, providing a strong evidence of their developed skills while studying on these programmes.

14. Course standards and quality

This course complies with, and is subject to, the University's requirements with respect to course standards and quality. The course will have

External examiners

The Interim Course Report which provides an annual 'health check' of the course once a year. Primarily this activity serves to check everything is appropriately in place to assure the quality and standards of the provision for the next cohort of students. It also provides an opportunity to assess progress made on the Course Development Plan (articulated at the most recent Periodic Course Review) and update this where necessary. Full details are at Section 6 of the University's Quality Handbook available at http://www4.ntu.ac.uk/adq/quality_handbook/handbook_sections/index.html

Periodic Course Review –It is a mechanism to reflect on the validity, currency,

and the academic quality of the provision. It is carried out once every three years involving external stakeholders and students resulting in a three-year Course Development Plan.

Course committee which monitors student feedback on module delivery.

The Course Committee is responsible for the operational management and coordination of the course. The Course Committee considers the course in term of the statutes, regulations and provisions of the University.

The Course Committee meets at least three times each academic year, and is responsible for the monitoring and development of the course. Your cohort will be asked to elect two members of your student group to act as course representatives to this committee.

The Course Committee will be as follows:

The Head of Civil Engineering or his/her nominee

The Course Leader

The Course Administrator

Module leaders

Members of the academic staff of SADBE may be appointed as appropriate or as a reflection of their module contribution

A maximum of two representatives from each cohort of students enrolled on the Masters pathway elected by the cohort.

There are external examiners, one of whom is an academic, and they submit an annual report on the standards and quality of the course.

The course intends to apply for accreditation from the Joint Board of Moderators (JBM) of the Engineering Council.

15. **Assessment regulations**

This course is subject to the University's Common Assessment Regulations located in its Quality Handbook. Any course specific assessment features are described below:

There are no course specific exceptions from the University regulations.

16. **Additional Information**

Collaborative partner(s):	None
Course referenced to national QAA Benchmark Statements:	Engineering (2015)
Course recognised by:	
Date implemented:	
Any additional information:	

Confirmed for 2017-18 delivery