



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

Department of Civil, Structural and
Environmental Engineering

MSc in Engineering Handbook 2018-2019



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Introduction

Welcome to the MSc in Engineering (Environmental/Structural & Geotechnical/Sustainable Energy/Transport Engineering Policy and Planning) at the Department of Civil, Structural and Environmental Engineering, Trinity College Dublin. This course aims to develop Engineers with specialist understanding in one of following streams: Environmental Engineering; Structural & Geotechnical Engineering; Transport Engineering; or Sustainable Energy Engineering. In addition, the course offers students the opportunity to obtain knowledge in complimentary subject areas within Civil Engineering.

This Course Handbook provides details of the structure and methods of assessment of the programme modules, and other relevant information about the course.

Key Dates: 2018-2019

Teaching Terms

First Semester

Monday 10 September 2018 – Friday 14 December 2018

Teaching/Learning Term: 10 September 2018 – 30 November 2018

Study Week: 22 – 26 October 2018 (week 7 of the semester)

Revision Week: 3 – 7 December 2018

Semester 1 Examination/Assessment: 10 December 2018 – 14 December 2018

Second Semester

Monday 21 January 2019 – Friday 19 April 2019

Teaching/Learning Term: 21 January 2019 – 19 April 2019

Study Week: 4 March – 8 March 2019 (week 7 of the semester)

Revision Week: 15 – 19 April 2019

Semester 2 Examination/Assessment: 22 April 2019 – 26 April 2019

Please note that each semester will include a reading week during which there will be no scheduled lectures and the students will be required to carry out coursework and independent study. Hence, modules are scheduled over a ten-week period although lectures will only be scheduled over nine of these weeks.

Key Dates: 2018-2019 Contd.

Project Submission Dates:

FAILURE TO SUBMIT COURSEWORK ON TIME COULD RESULT IN GETTING NO MARK.

CE7M02

- Research Proposal Report – **Friday, 26th October 2018** [Semester 1, Wk 7]
- Research Proposal Presentation – **Monday, 22nd October 2018** [Semester 1, Wk 7]
- Ethics Essay – **Friday, 8th March 2019** [Semester 2, Wk 7]
- Design of Experiment – **Monday 21st January 2019** [Semester 2, Wk 1]
- Research paper – **date to be advised** - August 2019.

CE7M04

- Data Analysis
 - **(a) Systematic mapping and meta-analysis – Semester 1:** Submission date: **Monday, 5th November 2018** at 17:00 hrs via Blackboard.
 - **(b) Literature review/peer review – Semester 1:** Submission date: **Monday, 19th November 2018** at 17:00 hrs via Blackboard.
- **Lunchtime Lectures :**
 - **Lunchtime Lectures – Semester 1 [3 reports]:** Submission date – **Wednesday, 31st October 2018** at 17:00 hrs via Blackboard [Semester 1, Calendar week 10]
 - **Lunchtime Lectures – Semester 1 [3 reports]:** Submission date – **Monday, 21st January 2019** at 17:00 hrs via Blackboard [Semester 2, Calendar week 22]
- GIS Assignment – **Monday, 21st January 2019 at 17:00 hrs** [Semester 2, Calendar week 22]

CE7M03

- Interim Poster Presentation – **4th March 2019** [Semester 2, Wk 7]
- Final Dissertation Submission – **6th August 2019** [Wk, 51]
- Final Presentation – date to be advised – **September 2019.**

Course Structure

Candidates must take twelve modules, namely the four mandatory modules (M1, M2, M4 and M3), together with at least four of the modules in their chosen specialisation and four other modules, which in total amounts to 90 ECTS. The modules are listed below:

Mandatory

- M1. Civil Engineering Management (10 ECTS)
- M2. Research Methodology (5 ECTS)
- M4. Engineering Project (5 ECTS)
- M3. Dissertation (30 ECTS)

Environmental Engineering

- E1. Hydrological Processes & Hydrometry (5 ECTS)
- E3. Air Pollution (5 ECTS)
- E4. Waste Management & Energy Recovery (5 ECTS)
- E5. Water Quality and Hydrological Modelling (5 ECTS)
- E6. Water Resource Planning & Climate Change (5 ECTS)
- E7. Sustainable Water Supply & Sanitation (5 ECTS)

Structural & Geotechnical Engineering

- S1. Geotechnical Engineering (5 ECTS)
- S2. Advanced Structural Analysis (5 ECTS)
- S3. Wind and Earthquake Engineering (5 ECTS)
- S4. Bridge Engineering (5 ECTS)
- S5. Advanced Concrete Technology (5 ECTS)
- S6. Soil-Structure Interaction (5 ECTS)
- S7. A Unified Theory of Structures (5 ECTS)
- S9. Advanced Theory of Structures (5 ECTS)

Sustainable Energy

- J1. Wind Energy (5 ECTS)
- J2. Solar Energy Conversion & Applications (5 ECTS)
- J4. Energy Policy & Demand (5 ECTS)
- J6. Wave & Hydro Energy (5 ECTS)

Transport Engineering, Policy and Planning

- T1. Transportation Policy (5 ECTS)
- T2. Transport Modelling & Planning (5 ECTS)
- T4. Transportation Data & Evaluation (5 ECTS)
- T5. Transport Design (5 ECTS)

Common

C4. Facade Engineering (5 ECTS)

C5. Advanced Spatial Analysis Using GIS (5 ECTS)

Some of the module options in either semester may be withdrawn from time to time and some new modules may be added, subject to demand. In the event that insufficient module options are available to meet the minimum module requirements of a particular specialisation then an alternative specialisation or a general Civil Engineering specialisation may be chosen.

Full time study

In the first semester, candidates pursuing the course full time must take mandatory modules –

- M1 – Civil Engineering Management, Semester 1
- M2 – Research Methodology, Semester 1 & Semester 2
- M3 –Dissertation, Semester 1 & Semester 2
- M4 – Engineering Project, Semester 1 & Semester 2 [Lunchtime lectures]

along with four other modules selected from the options (including at least two from their selected specialisation), listed above.

In the second semester, candidates pursuing the course full time must complete modules M2, M3 and M4 along with four other modules selected from the options (including at least 2 from their selected specialisation), also listed above.

Part-time study

Candidates may also take the course part-time over two years. In this case, during the first year, candidates pursuing the course part time must take the following three mandatory modules:

- M1 – Civil Engineering Management, Semester 1
- M2 – Research Methodology, Semester 1 & Semester 2
- M4 – Engineering Project, Semester 1 & Semester 2 [Lunchtime lectures]

along with five of the module options (including at least two from their chosen specialisation) which amounts to 45 ECTS.

During the second year, candidates must complete the compulsory M3 module together with three other module options (including at least two from their chosen specialisation) which amounts to another 45 ECTS. By the end of the course, part-time candidates must have completed at least four of their specialisation module options, four of the other module options, along with M1, M2, M3 and M4, amounting to a total of 90 ECTS credits.

Selection of Modules

An important decision that you will have to make early in the program is which optional modules you are going to take examinations in. **You must confirm which module options you are taking in both the first and second semesters by completing the online form by Wednesday, 19th September 2019.** You will not have access to modules on blackboard or in your student portal until you have registered your selection as instructed here.

Selection of Research Project for MSc Dissertation

The MSc dissertation is a very important part of the MSc program. It allows the students to carry out in-depth research about a topic and to carry out laboratory/field/numerical work. In the first semester, a list of possible projects will be compiled by the academic staff and distributed to the MSc class. The students will be requested to choose a project in their specialization (Environmental/Structural & Geotechnical/Sustainable Energy/Transport Engineering Policy and Planning) for their MSc dissertation, having discussed and agreed beforehand with the relevant supervisor. Students are also welcome to suggest their own topics for projects and they may proceed with these projects once a suitable supervisor has been found from the academic staff.

The students must confirm which research project they are taking for their MSc dissertation by Wednesday, 19th September 2019. The students should contact their potential supervisors to discuss the research projects as soon as possible, these will be issued on a first come basis.

Teaching Methods

A wide range of teaching methods are employed on the program. The teaching method reflects the teaching objectives and includes formal lectures, seminars, group design projects and site visits. Students are encouraged to ask questions during or after lectures or seminars if points require clarification, or if their own experience provides useful insight into the subject in hand.

Learning Methods

Success on the course is strongly linked to study skills. While each individual has a different style of learning, the following points will help you do well on the course.

1. Work steadily

Successful students take a serious and committed attitude to their subject from the first day of the course. Last minute rushes to meet deadlines and panic cramming invariably decreases the quality of learning.

2. Review all teaching promptly and thoughtfully

Most effective learning takes place outside the lecture theatre. It is advisable to go through lecture notes as soon as possible after each lecture, even if only a few minutes are spent for each lecture. Compare what has been heard and discussed with the information in the references and recommended texts. Consider the information and distinguish between learning single facts and understanding the subject matter. The lecturer will be happy to clarify any queries that may arise at the next lecture or personally, by appointment, at a later date.

3. Attend regularly

No lecturer is likely to explain material in a lecture a second time to someone who was absent the first time. Failure to attend lectures will be reflected in the marks for the relevant assessment.

4. Plan your time carefully

It may be helpful to draw up a schedule of commitments: reviewing lectures, preparing laboratory reports, essays and exam revision. An estimate should be made of how much time will be needed for each task, working backwards from each deadline to find out when the next task should be started.

5. Working with colleagues

Working with a few colleagues in a group will often help everyone to learn effectively. For example, it may be necessary to set time aside each day to review lecture notes together. Working together may help with your personal discipline, while discussing a subject often clarifies many of the issues and concepts involved.

However, it should be pointed out that working together is not the same as copying another person's

work. Copying another person's work is considered as plagiarism. Plagiarism is considered as a major offence, and subject to the disciplinary procedures of the University. More information about plagiarism can be found in the college webpage: <https://www.tcd.ie/TSM/current/exam/plagiarism.php>.

Assessment

Students will be examined in the compulsory and optional modules and the MSc dissertations will also be assessed. A Board of Examiners oversees the assessment of students. The Board of Examiners is made up of the academic staff and the independent External Examiner. The External Examiner is an eminent academic staff member from another University, currently Prof. Susan Taylor from Queens University Belfast. The function of the External Examiner is to overlook the assessment procedures and to moderate the marking of examinations, coursework and projects by the members of the academic staff.

MSc students will be assessed on the basis of written examinations, continuous assessment and successful completion of a substantial research project with the submission of a MSc dissertation of approximately 30,000 words.

The pass mark for all elements is 50%. The overall mark for the course is the credited weighted average of the mark awarded in each module. To qualify for the award of the MSc degree, students must achieve an overall average mark of at least 50%, achieve a pass mark in M3 Dissertation module and either i) pass taught modules amounting to 60 ECTS or ii) pass taught modules amounting to at least 50 and have a mark of not less than 40% in the failed modules. Those students who achieve an overall average mark 70% or above both for the course and in M3 Dissertation will be awarded a distinction. A distinction cannot be awarded if a candidate has failed any credit during the course.

Assessment methods used include:

- Continuous Assessment
- Formal Examination
- Oral Presentations of Individual Projects
- MSc Dissertation

Continuous Assessment

Continuous assessment will form a significant part of certain modules, particularly M2 and M4 which are based on continuous assessment only. Continuous assessment includes class attendance, tutorials, class tests, reports, essays and other coursework. Failure to attend lectures will be reflected in the marks for the continuous assessment. **Coursework submitted after the deadline without permission will not be marked.**

Formal Examinations

Examinations will be held from 10th December until 16th December 2018 in Semester 1 and 22nd April until 28th April 2019 at in Semester 2. They consist of unseen written questions of a variety of types including short questions, mathematical problems and essays. They serve to test factual knowledge and the development of theoretical understanding of the subjects. All annual examinations will be three hours in duration, unless stated otherwise.

Formal examination questions are based on the content of the taught courses. **The best guarantee of success therefore is to work steadily throughout the course, reviewing the contents of each lecture using both your**

notes and standard texts. Past papers are available to download through the Exam Papers link on the TCD homepage.

MSc Dissertation

MSc dissertation will contribute to 90% of marks in M3 module which will run from semester one until the end of September 2019, and include a significant research component. An additional 10% of M3 marks will be awarded based on an interim project presentation. The MSc dissertation is a major undertaking requiring maturity, planning, analysis and a considerable amount of hard work. Two soft-bound copies must be handed in no later than Tuesday, **6th August 2019**. **The MSc dissertation submitted after the deadline without permission will not be marked.** Two hardbound copies of the dissertation, including corrections where necessary, must be submitted by the end of September 2019. Recommendations for the format and presentation of dissertations are given in an appendix.

The marks for the dissertation (90%) are awarded on the following basis:

1. Presentation = 25%.
2. Amount of own work done = 25%.
3. Understanding and difficulty = 25%.
4. Conclusions =25%.

Also important are the initiative and commitment shown by the student and two presentations. It is **mandatory** that students make a presentation of the project to their class and the Civil Engineering Staff, normally June, and also to the External Examiner in September. The dates, schedule and format of presentations will be issued closer to the date.

Failure and Reassessment

The Board of Examiners meet twice during the academic year: once in January following the semester one examinations, and again during September. Students do not automatically have the right to repeat examinations. It is solely at the discretion of the Board of Examiners that students be permitted to repeat examinations. There is one sitting of the annual examinations for each module offered during the academic year. There are no special examinations after the annual examinations. Students who miss examinations due to an explained absence, and on permission of the Board of Examiners, may take the examination during the annual examination period the following academic year.

Note that students who complete the examination requirements of all the selected modules, except M3, may on the recommendation of the Board of Examiners be awarded a Postgraduate Diploma in Engineering (60 ECTS credits).

Prizes

The student who achieves the highest overall mark based on the annual MSc in Engineering examinations is awarded the Robert Friel Prize, valued at €200. The student who achieves the highest overall mark based on their dissertation is awarded the best project prize, valued at €200.

Attendance Requirements

You must attend all lectures, site visits and examinations for your chosen modules in the MSc in Engineering. **You must inform the lecturer and the course co-ordinator as soon as possible of any absences.** All the academic staff are very sympathetic to students who have genuine reasons for missing a period of studies or an examination. Compensation for missed or late assessments (including examinations) however, will only be possible if accompanied by a Medical Certificate or other compelling evidence.

Plagiarism

The College's policy on plagiarism is outlined in the general regulations and information (Part II of the Calendar). In the [Calendar Part 2 for 2018-19](#) the entry for plagiarism is at paragraph 82. A general set of guidelines for students on avoiding plagiarism is available on <http://tcd-ie.libguides.com/plagiarism>. This site also provides a matrix of the levels of plagiarism together with the consequences, if they are found to have committed plagiarism. Further, it contains the online tutorial 'Ready, Steady, Write' which must be completed by all students: students should be made aware of this and their attention drawn to the declaration which they must complete when submitting work for assessment.

There is no substitute to reading the regulations but here are a few of the key points. Plagiarism arises from:

- copying another student's work
- enlisting another person or persons to complete an assignment on the student's behalf
- quoting directly, without acknowledgement, from books, articles or other sources, either in printed, recorded or electronic format
- paraphrasing, without acknowledgement, the writings of other authors

Plagiarism is serious whether the plagiarism is deliberate or has arisen through carelessness. Be careful when you are writing your coursework and dissertation to make sure that you reference your work properly, giving credit to the sources you have used. At the discretion of individual lecturers, assignment may be checked for plagiarism using systematically using Turn-it-in or similar software systems. **Please note that any assignments, projects or continuous assessment submitted by students for assessment may be checked for plagiarism through the internet or through software packages, such as *Turnitin*.**



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Declaration concerning plagiarism

I have read and I understand the plagiarism provisions in the General Regulations of the *University Calendar* for the current year, found at <http://www.tcd.ie/calendar>

I have completed the Online Tutorial in avoiding plagiarism 'Ready, Steady, Write', located at <http://tcd-ie.libguides.com/plagiarism/ready-steady-write>

STUDENT NUMBER:.....

SIGNED:.....

DATE:.....

European Credit Transfer System (ECTS)

The ECTS is an academic credit transfer and accumulation system representing the student workload required to achieve the specified objectives of a study programme.

The ECTS weighting for a module is a measure of the student input or workload required for that module, based on factors such as the number of contact hours, the number and length of written or verbally presented assessment exercises, class preparation and private study time, laboratory classes, examinations, clinical attendance, professional training placements, and so on as appropriate. There is no intrinsic relationship between the credit volume of a module and its level of difficulty.

In College, 1 ECTS unit is defined as 20-25 hours of student input so a 5-credit module will be designed to require 100-125 hours of student input including class contact time and assessments. ECTS credits are awarded to a student only upon successful completion of the course year.

Keys

Keys to the front doors of the Simon Perry Building can be obtained from Mr. David McAuley, Chief Technician, damauley@tcd.ie, for a returnable deposit.

Safety Procedures

If any safety queries or complaints arise, they should be brought to the attention of the Department Safety Officer (Dr. David Igoe, igoed@tcd.ie, Red Brick Building) or another member of the technical staff. All students working in the laboratories must be made aware of the safety procedures of the laboratory and must wear appropriate footwear. Students working on-site must wear appropriate footwear and hard hats.

Student Opinion and Feedback

Module Questionnaires

The Department usually evaluates individual modules at the end of each lecture series. The information received is used to improve module provision on subsequent years.

Class Representative

A class representative is elected by the class in September of each year and will act as a liaison between staff and the MSc class.

Action on Feedback

Where possible and necessary, feedback will be acted on immediately.

Computing Facilities

Students have access to College computing facilities. In addition, the computer laboratory in the Old Civil Engineering Building (Red Brick Building) may be used by MSc students when not in use by other scheduled classes.

Careers Advisory Service

Postgraduate study opens the doors to many opportunities but the market is competitive and you will need to differentiate yourself clearly from other candidates.

Resources:

The Careers Advisory Service (CAS) provides a wide range of resources and services to help you make and implement informed choices about your future career direction.

The Careers Information Centre at 7-9 South Leinster Street contains a range of free, career-related booklets and employer materials for you to take away. Online, the resources section of the website (www.tcd.ie/Careers/resources) provides useful information on a range of topics from career choice and planning, to working abroad, taking a year out and everything in between.

Services:

Individual appointments to meet a Careers Consultant are also available. They work with you to identify how best to approach the next step in your career. They can also review your CV/LinkedIn profile and provide coaching to ensure maximum impact at interview.

Job opportunities from employers currently recruiting Trinity graduates as well as postgraduate courses and funding are available online.

CAS also offers a wide range of seminars; workshops and employer presentations, including postgrad specific events, throughout the year that will help you explore where your postgraduate study can take you.

MyCareer

An online service that you can use to:

- Apply for opportunities which match your preferences - vacancies including research options
- Search opportunities- postgraduate courses and funding
- View and book onto employer and CAS events
- Submit your career queries to the CAS team
- Book an appointment with your Careers Consultant

Simply login to MyCareer using your Trinity username and password and personalise your profile.

Careers Advisory Service

Trinity College Dublin, 7-9 South Leinster Street, Dublin 2

01 896 1705/1721 | Submit a career query through MyCareer



MyCareer:
mycareerconnect.tcd.ie



TCD.Careers.Service



TCDCareers



[www.tcd.ie/
Careers/students/postgraduate/](http://www.tcd.ie/Careers/students/postgraduate/)



@TCDCareers



[tinyurl.com/LinkedIn-TCD-
Connecting](http://tinyurl.com/LinkedIn-TCD-Connecting)

Opening Hours

During term: 9.30am - 5.00pm, Monday - Friday

Out of Term: 9.30am - 12.30pm & 2.15 - 5.00pm, Monday - Friday

Degree Support and Administration

The Course Director, Dr. Liwen Xiao along with the Head of Department, Prof. Brian Broderick, have responsibility for the MSc in Engineering program. The administration of each module is delegated to the Module Coordinators. The Module Coordinators are identified in the relevant Module Outline sheets and should be consulted in relation to module specifics. Planning and review of the program is undertaken in a series of meetings held each summer.

<u>OFFICE SUPPORT</u>	
Mary Curley Course Administrator Department Office, Museum Building email: curleyma@tcd.ie Tel: 8961457	Daniel Wearen Senior Executive Officer Department Office, Museum Building email: wearend@tcd.ie Tel: 8962217
<u>TECHNICAL SUPPORT</u>	
Mr. David McAuley, Chief Technician Old Civil Engineering Laboratory email: damcaley@tcd.ie Tel: 896 2386 /1010	Dr. Victor Usov New Civil Engineering Building email: usovv@tcd.ie tel: 8968578
Mr. Eoin Dunne New Civil Engineering Building email: edunne@tcd.ie Tel: 8962386	Mr. Michael Grimes New Civil Engineering Building email: migrimes@tcd.ie Tel: 8962388
Mark Gilligan New Civil Engineering Building email: gilligma@tcd.ie Tel: 8962386	Mr. Patrick Veale New Civil Engineering Building email: vealep@tcd.ie Tel: 8963013

Academic Staff – 2018/2019

<p>Prof. Brian Broderick Simon Perry Building email: bbrodrck@tcd.ie Tel: 8962348</p>	<p>Prof. Biswajit Basu Simon Perry Building email: basub@tcd.ie Tel: 8962389</p>
<p>Asst. Prof. Brian Caulfield Simon Perry Building email: brian.caulfield@tcd.ie Tel: 8962534</p>	<p>Prof. Ravindra Dhir Adjunct Professor Department of Civil, Structural & Environmental Engineering Trinity College, Dublin 2</p>
<p>Asst. Prof. Breiffni Fitzgerald Simon Perry Building Email: Tel: 8961146</p>	<p>Asst. Prof. Bidisha Ghosh Simon Perry Building email: bghosh@tcd.ie Tel: 8961047 <i>(Sabbatical leave – Semester 1)</i></p>
<p>Prof. Laurence Gill Museum Building email: laurence.gill@tcd.ie Tel: 8961047</p>	<p>Asst. Prof. Niamh Harty Old Civil Engineering Labs email: hartyn@tcd.ie Tel: 8961302</p>
<p>Asst. Prof. David Igoe Old Civil Engineering Labs Email: igoed@tcd.ie Tel: 8963805</p>	<p>Adj. Prof. Paul Johnston Museum Building email: pjohnston@tcd.ie Tel: 8961372</p>
<p>Assoc. Prof. Sarah McCormack Simon Perry Building email: mccorms1@tcd.ie Tel: 8963321</p>	<p>Assoc. Prof. Aonghus McNabola – Head of Department Simon Perry Building email: amcnabol@tcd.ie Tel: 8963837</p>
<p>Adj. Prof. Bruce Misstear Museum Building email: bmisster@tcd.ie Tel: 8962800</p>	<p>Assoc. Prof. Maria Nogal Trinity Haus, email: nogalm@tcd.ie Tel: 8963810</p>
<p>Adj. Prof. Trevor Orr Museum Building email: torr@tcd.ie Tel: 8961204</p>	<p>Prof. Alan O'Connor Simon Perry Building email: alan.oconnor@tcd.ie Tel: 8961822</p>
<p>Assoc. Prof. Dermot O'Dwyer Museum Building email: dwodwyer@tcd.ie Tel: 8962532</p>	<p>Assoc. Prof. Brendan O'Kelly Simon Perry Building email: bokelly@tcd.ie Tel: 8962387</p>

Prof. Margaret O'Mahony Museum Building email: margaret.omahony@tcd.ie Tel: 8962084	Assoc. Prof. Sara Pavia Simon Perry Building email: pavias@tcd.ie Tel: 8962516
Asst. Prof. Liwen Xiao Simon Perry Building Email: lxiao@tcd.ie Tel: 8963741	Assoc. Prof. Roger West Simon Perry Building email: rwest@tcd.ie Tel: 8961832 <i>(Sabbatical leave – Semester 1)</i>

APPENDIX 1 - UNDERTAKING THE MSc DISSERTATION

The dissertation is a very important part of the MSc program. It allows students to carry out in-depth research about a topic and to carry out laboratory/field/numerical work.

In the first semester, a list of possible projects will be compiled by the academic staff and distributed to the MSc class. A presentation of these topics will be made by individual lecturers to the class and students will be requested to choose a project on which to work, having discussed and agreed beforehand with the relevant supervisor. Students are also welcome to suggest their own topics for projects and they may proceed with these projects once a suitable supervisor has been found from the academic staff.

Projects may be laboratory based, computer based or desk based, and may be carried out in Dublin, elsewhere in Ireland or abroad if appropriate.

The work on the project, should start in semester one and run through until the middle of August. Students make oral presentations of the project to the class and academic staff in June 2019. The dissertation must be submitted by the 6th August 2019, and evaluation (by oral presentations and possible interviews with the external examiner) will take place towards the first half of September 2019. The dates and schedule of presentations/interviews will be issued closer to the date.

APPENDIX 2 - RECOMMENDATIONS FOR THE FORMAT OF THE MSc DISSERTATION

Two *soft bound* copies of the MSc dissertation must be submitted by 6th August 2019. The title of the project should be written on the front outer cover, with the student's name, qualification for which the work is submitted and year of submission. Two hardbound copies must be submitted once the dissertation has been passed by the supervisor and Board of Examiners. A pdf version of the dissertation must also be sent to the MSc course director. A dissertation which has been examined and in which all necessary corrections have been completed, must be securely bound in hard covers with dark blue colour. The final size when bound must not exceed 320 x 240 mm. All copies must include a statement that the work carried out was the student's own and has not been submitted as part of a degree in this or any other university.

General Details

Recommended Dissertation Layout

The following is a complete list of the various pages and sections that are likely to be needed in any dissertation.

- Title page
- Declaration
- Abstract
- Table of Contents
- List of Tables and Figures
- Acknowledgements
- Abbreviations
- Introduction
- Literature Review
- **DISSERTATION MAIN BODY**
- List of References
- Appendices

These will now be considered in detail:

Title Page

This should contain the following information:

- the full title of the dissertation;
- qualification for which the report is submitted;
- month and year of submission.
- author's full name;

Declaration:

The dissertation must contain immediately after the title page:

- (a) a signed declaration that it has not been submitted as an exercise for a degree at this or any other University,
- (b) a signed declaration that it is entirely the candidate's own work (in the case of a dissertation for which the work has been carried out jointly, there must be a statement that it includes the

unpublished and/or published work of others, duly acknowledged in the text wherever included) and

- (c) a signed statement that the candidate agrees that the Library may lend or copy the dissertation upon request. This permission covers only single copies made for study purposes, subject to normal conditions of acknowledgment. (See below for stays on the exercise of this permission).

Abstract

This section, which should only be **one A4 page** long, is intended to give an overview of the whole project. It should contain a description of the work undertaken and of any significant results or conclusions reached. One copy of the abstract, printed on a single sheet of A4 paper, must also be submitted loose with each copy of the dissertation. The abstract must contain the title of the dissertation and the author's full names as a heading and may be single spaced.

Table of Contents

This is to list all relevant subdivisions of the dissertation including the various appendices and should include page numbers.

Acknowledgements

A formal statement of acknowledgments must be included in the dissertation.

Introduction

This should provide background information about the topic. The objectives of the project should be stated clearly.

Literature Review

A comprehensive summary of the literature, relevant only to the particular research topic should be given. This should consist mainly of **recent** specific references to journals, books and conference proceedings. It is not normally necessary to refer to general textbooks. References in the literature review should not be cited unless they have actually been read. Key, early references, to the topic may be included, but avoid the use of very general references. The Literature Review should preferably finish with a brief summary and lead in to the *particular* research topic.

Dissertation Main Body

The layout of this most important part of the dissertation will depend on the particular subject matter covered. The layout should be discussed with the relevant supervisor before the dissertation is written. There will be usually between 6 and 8 chapters in the dissertation (including the introduction and the literature review). The chapters should be sub-divided with appropriate headings. Numbering of headings and subheading should be as follows: 3., 3.1, and 3.1.1, etc (but not 3.1.1.1, further sub-division should be: 3.1.1, i, ii, a, b, etc.).

Chapters describing the aims and objectives, the results and analysis and a discussion of the results must be included. In addition, the final chapter should outline the conclusions and/or recommendations. Recommendations for future work should also be included in the last chapter. Consistency is very important throughout the dissertation, including the way in which lists are made.

List of References

Whenever some use is made of any external material in the dissertation, this should be admitted to by referring specifically to the book, journal article, conference proceedings or other source, as:

"...Smith (1995) stated that...." or

"Studies have shown....(Smith, 1995).

When an author has published more than one cited document in the same year letters a,b,c etc. are included after the year in the parentheses. If there are two authors both names are given. If there are more than two authors, the first author and "et al." is used:

"Smith et al. (1995) stated that...."

If you refer to a **source quoted in another work** you cite both in the text:

"A study by Smith (1960 cited Jones 1994 p.24) showed that..."

These references are then given in detail under the 'List of References' section. They must be given in ALPHABETICAL ORDER. The method of referencing for Trinity College is the Harvard system.

For a book

Author's SURNAME, INITIALS., (Year of publication) *Title*. Edition. (if not the first). Place of publication: Publisher.

MISSTEAR, B.D.R., BANKS, D. and CLARK, L. (2006), *Water Wells and Boreholes*, London., J. Wiley & Sons.

For a contribution in a book:

Contributing authors SURNAME, INITIALS, (Year of publication) Title of contribution, Followed by: *In*: INITIALS, SURNAME of author or editor of publication followed by ed. or eds. if relevant, *Title of book*, Publisher, Page numbers of contribution.

SMITH, J. (1998) Activity based analysis of travel behaviour. In: P. JONES ed. *New approaches to modelling*, Blackwell, 10-20.

For a journal article

Author's SURNAME, INITIALS, (Year of Publication), Title of article, *Name of Journal*, Volume No. (Part), Relevant pages.

MISSTEAR, B.D.R., BROWN, L. and DALY, D. (2009) A methodology for making initial estimates of groundwater recharge from groundwater vulnerability mapping, *Hydrogeology J.*, 17(2), 275-285.

For an article published in conference proceedings

Author's SURNAME, INITIALS, (Year of Publication), Title of article, *Title of proceedings* including date and location of conference, Relevant pages, Publisher.

YOUNG, C.P. (1986). Nitrate in groundwater and the effects of ploughing on release of nitrate. *Proceedings of Effects of Land Use on Fresh Waters* 10-17 July 1986 University of Stirling. 221-237, Ellis Horwood.

For a publication from a corporate or government body:

NAME OF ISSUING BODY, (Year of publication) *Title of publication* .Place of publication: Publisher, (Report Number) (where relevant).

UNESCO, (1993) *General information programme and UNISIST*. Paris: UNESCO, (PGI-93/WS/22).

For a thesis:

AUTHOR'S SURNAME, INITIALS, (Year of publication) *Title of thesis* .Designation (and type), Name and institution to which submitted.

MATTHEWS, L. (1992). *Soil-structure interactions*. Thesis (PhD). Trinity College Dublin.

Reference to electronic sources (individual work):

Author/editor. (Year). *Title* [online]. (Edition). Place of publication, Publisher (if ascertainable). Available from: URL [Accessed Date].

Williams, M. (1998) *Stated preference techniques*. [online]. Dublin, Trinity Press. Available from www.tcd.ie/Williams [Accessed 10 July 2000]

Reference to E-Journals

Author. (Year). *Title*. *Journal Title* [online], volume (issue), location within host. Available from: URL [Accessed Date].

James A. (1999) A review of modelling methods. *Transportation Research*. [online], 10 (2), Available from: www.transport.com/tr/aj [Accessed 15 June 2001]

Appendices

Appendices should be used where supporting material that would disrupt the flow of the main dissertation is to be included. They are particularly useful for tables, questionnaires, programming codes and lists of information. Appendices should be divided to contain different types of information.

Once the dissertation has been completed, please ask a colleague to read through it for you to check for errors and to ensure that the objectives set out were achieved.



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

**Department of Civil, Structural and Environmental
Engineering**

MSc in Engineering 2018-2019

Student name & number	
Stream	
Module	
Name of Lecturer	
Title of Assignment	
Date	

APPENDIX 4 – Postgraduate Advisory Service



The Postgraduate Advisory Service is a unique and confidential service available to all registered postgraduate students in Trinity College. It offers a comprehensive range of academic, pastoral and professional supports dedicated to enhancing your student experience.

Who?

The Postgraduate Advisory Service is led by the Postgraduate Support Officer who provides frontline support for all Postgraduate students in Trinity. The Postgrad Support Officer will act as your first point of contact and a source of support and guidance regardless of what stage of your Postgrad you're at. In addition each Faculty has three members of Academic staff appointed as Postgraduate Advisors who you can be referred to by the Postgrad Support Officer for extra assistance if needed.

Contact details of the Postgrad Support Officer and the Advisory Panel are available on our website: http://www.tcd.ie/Senior_Tutor/postgraduate/

Where?

The PAS is located on the second floor of House 27. We're open from 8.30 – 4.30, Monday to Friday. Appointments are available from 9am to 4pm.

Phone: 8961417

Email: pgsupp@tcd.ie

What?

The PAS exists to ensure that all Postgrad students have a contact point who they can turn to for support and information on college services and academic issues arising. Representation assistance to Postgrad students is offered in the area of discipline and/ or academic appeals arising out of examinations or thesis submissions, supervisory issues, general information on Postgrad student life and many others. If in doubt, get in touch! All queries will be treated with confidentiality. For more information on what we offer see our website.

If you have any queries regarding your experiences as a Postgraduate Student in Trinity don't hesitate to get in touch with us.

APPENDIX 5 – Academic Skills for Successful Learning

Skills4Study Campus has now been replaced by a Blackboard module called Academic Skills for Successful Learning designed by Student Development. This is available to all students from:

<http://mymodule.tcd.ie/>

Student Learning Development

Student Learning Development is here to help you develop and master the academic skills to succeed at Trinity. The supports available include:

- Free workshops throughout the year on a variety of topics for students from all departments.
- A Blackboard module featuring a range of resources, including podcasts and interactive workshops that provide academic support to students. Topics include:
 - o Time management
 - o Presentation skills (incl poster presentations)
 - o Procrastination and Concentration
 - o Effective study skills
 - o Writing skills
 - o Exam skills
- Individual consultations – meet with a learning advisor to discuss your study issues.
- For more information please visit <http://student-learning.tcd.ie>

Other supports for learning in College include:

- The Maths Help Room, which provides informal help from Trinity students. It is located in the Maths Seminar Room, 2nd Floor, 18 Westland Row and is open on Monday-Friday, from 1-2pm
- The Programming Support Centre is available to all computer science and engineering students taking programming courses. See www.scss.tcd.ie/misc/psc
- Peer Learning is available in several of the modern language departments. It involves working with other students to get the most from your course to improve performance. E-mail us for further information: student.learning@tcd.ie

Accessing the Blackboard module:

Search for 'Academic Skills for Successful Learning' –

Details to follow.

Accessing the service:

Student Learning Development

Trinity College Dublin

3rd Floor, 7-9 South Leinster Street

Dublin 2, Ireland

Web: <http://student-learning.tcd.ie>

Email: student.learning@tcd.ie

Phone: 01 896 1407