



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

School of Computer Science & Statistics

MSc/PG. Dip. Computer Science 2022–23

Augmented & Virtual Reality

Data Science

Future Networked Systems

Intelligent Systems

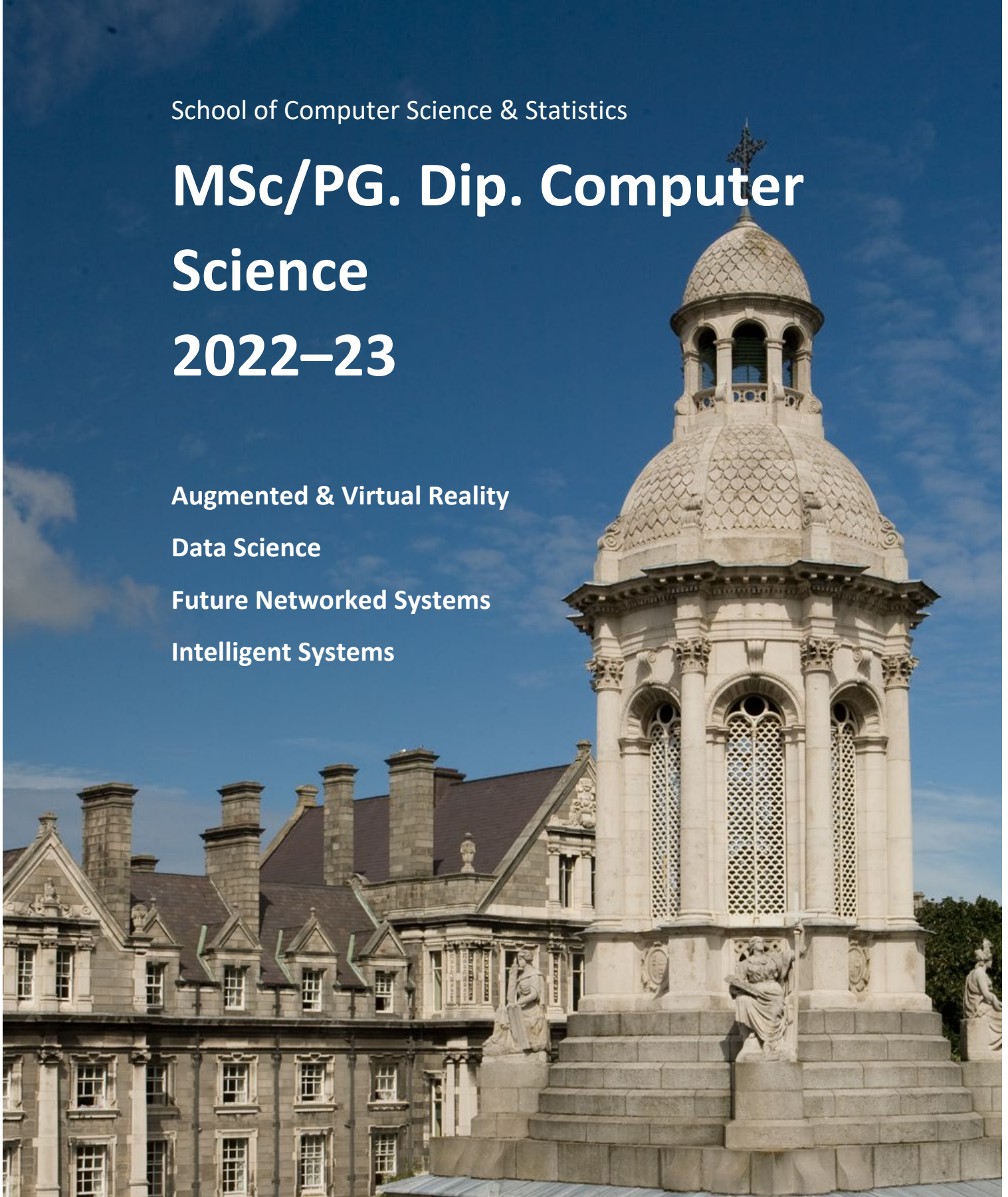


TABLE OF CONTENTS

DISCLAIMERS	4
1. WELCOME.....	5
2. COURSE INFORMATION	6
2.1. INTRODUCTION.....	6
2.2. ABOUT THE STRANDS.....	6
2.3. COURSE DURATION	7
2.4. COURSE FEES	7
2.5. ENTRY REQUIREMENTS	7
2.6. COURSE STRUCTURE AND MODULES.....	7
2.6.1. <i>Data Science Strand Structure</i>	7
2.6.2. <i>Future Networked Systems Strand Structure</i>	8
2.6.3. <i>Augmented & Virtual Reality Strand Structure</i>	8
2.6.4. <i>Intelligent Systems Strand Structure</i>	8
2.7. ECTS	9
2.8. MODULE LISTING	9
2.9. RESEARCH DISSERTATION	10
2.9.1. <i>Dissertation Oral Examination</i>	10
2.9.2. <i>Ethical Approval</i>	10
2.9.3. <i>College Regulations for MSc Dissertations</i>	11
2.10. ATTENDANCE REQUIREMENTS	11
2.11. COURSE CALENDAR	11
3. ASSESSMENT.....	13
3.1. EXAMINATIONS.....	13
3.2. QUALIFICATIONS ACHIEVED.....	13
3.3. INDIVIDUAL WORK AND PLAGIARISM	13
3.4. COURT OF EXAMINERS	14
3.5. ABSENCE FROM EXAMINATIONS.....	14
4. COURSE STAFF	15
4.1. COURSE DIRECTOR	15
4.2. STRAND COORDINATORS	15
4.3. COURSE ADMINISTRATION	15
4.4. OTHER KEY SCHOOL PERSONNEL.....	15
4.5. EXTERNAL EXAMINER.....	15
4.6. COURSE COMMITTEE	16
4.7. DISSERTATION SUPERVISORS	16
5. FACILITIES AND RESOURCES.....	17
5.1. TEACHING VENUES.....	17
5.2. OPEN LAB ACCESS AND RESEARCH FACILITIES	17
5.3. IT AND SUPPORT INFRASTRUCTURE	17
5.4. STUDENT ACCOUNTS	17
5.5. ACCESSING ONLINE COURSE MATERIALS, MEETINGS AND TALKS.....	18
5.6. EMAIL.....	18
5.7. WIRELESS LAN.....	18
5.8. STUDENT OWNED EQUIPMENT	18
5.9. COURSE WEBSITE	19
5.10. SCHOOL SOFTWARE RESOURCES	19
5.11. COLLEGE SOFTWARE RESOURCES	19

6. GENERAL INFORMATION	20
6.1. MAP OF TRINITY COLLEGE	20
6.2. SWIPE CARD ACCESS	20
6.3. POSTGRADUATE ADVISORY SERVICE.....	20
6.4. GRADUATE STUDENTS UNION	21
6.5. UNIVERSITY POLICIES AND REGULATIONS.....	21
6.6. EMERGENCY PROCEDURES	22
APPENDIX 1: USEFUL WEB LINKS.....	23
APPENDIX 2: PROCESS FOR SUBMISSION OF MSC IN COMPUTER SCIENCE DISSERTATIONS.....	24
APPENDIX 3: REGULATIONS FOR CANDIDATES ON SUBMISSION OF MSC DISSERTATIONS.....	25
APPENDIX 4: PLAGIARISM.....	30
APPENDIX 5: ASSESSMENT SUBMISSION FORMS	32

Document Preparation Date: 24th August 2022

Disclaimers

The information contained in this document is intended to provide a guide to those seeking admission to the programme, and to the students on the course. Trinity College Dublin and the School of Computer Science and Statistics reserve the right to update or change syllabi, timetables, or other aspects of the programme at any time. Changes will be notified to current students by email.

In the event of any conflict or inconsistency between the General Regulations published in the University Calendar and information contained in this handbook, the provisions of the General Regulations in the Calendar will prevail.

Alternative formats of this Handbook can be made available on request.

1. Welcome

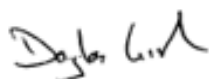
Dear Student,

Welcome to the MSc in Computer Science programme and to Trinity College, if this is your first time studying here. You are going to have the opportunity now to both immerse yourself in the culture and history of Ireland's oldest University with its fantastic campus and student life as well as participate in one of Ireland's newest and state-of-the-art courses.

Please take the time to read this document carefully. There is quite a lot of information in here, much of which we will summarise during the introductory sessions early in the first term, but it is nonetheless important that you familiarise yourself with the course details as early as possible.

We have enjoyed putting this course together and hope that, with your input and co-operation, we can work to make this one of the world's top MSc programmes.

Yours sincerely,



Professor Douglas Leith
Course Director
School of Computer Science and Statistics

2. Course Information

2.1. Introduction

The MSc in Computer Science is an exciting new one-calendar-year programme aimed at excellent students who are keen to deepen their existing knowledge of computing. The expectation of graduates is that this course enables them to have rewarding careers in Computing or in a profession that has Computing or IT as a core component. This course is also a suitable preparation for PhD studies. The course allows students to specialize in one of four technical strands: Augmented & Virtual Reality, Data Science, Future Networked Systems and Intelligent Systems.

2.2. About the Strands

Each strand consists of a mix of core, specialist and optional modules, drawn from a shared pool of modules, to ensure breadth and depth of technical content. Students can expect to be at the leading edge of research associated with these strands.

Data Science or Big Data has become a hugely important topic in recent years finding applications in Healthcare, Finance, Transportation, Smart Cities and elsewhere. In this strand, Trinity's leading experts in this field will guide you through how to gather and store data (using IoT and cloud computing technologies, process it (using advanced statistics and techniques such as machine learning) and deliver new insights and knowledge from the data.

The **Augmented & Virtual Reality** strand equips students with the theoretical and practical knowledge to enable them to participate in the design and development of the technology that underpins the fast-moving video game market as well as the wider industries of interactive entertainment, new media and communication. This strand is a modified version of the well-established and successful MSc in Interactive Entertainment Technology and is built on research expertise in the Trinity Centre for Creative Technologies.

Computer networking has transformed society over the past 20 years and is continuing to enable new advances from social networking through Internet-of-Things to Cloud computing. The **Future Networked Systems** strand builds on research activity within the CONNECT research centre and a long history of innovation and start-up companies at the school.

The **Intelligent Systems** strand focuses on smart, interactive web applications and systems, which are becoming an integral part of our daily lives - at home, in the workplace, and in social interaction. Designing and building these systems requires expertise in artificial intelligence, human language understanding and generation, web systems and applications, data analytics and knowledge engineering. This strand is closely linked to the school's research groups involved in the ADAPT centre for Digital Content Technology.

For further information, please see the following link:

<https://www.scss.tcd.ie/postgraduate/msc-cs/course-structure.php>

2.3. Course Duration

The MSc programme commences in September of each year and runs for one full year until August of the following year. Each module runs only for a set number of weeks during the year and is not repeated. Thus, students can only be admitted to the course in September of each year.

2.4. Course Fees

For details of fees for this course, please look under Postgraduate Fees at the following URL: <https://www.tcd.ie/academicregistry/fees-and-payments>

2.5. Entry Requirements

Other than in exceptional circumstances, applicants for the MSc programme should have an upper second-class honours degree, or better, in computing, information technology or another numerate discipline such as engineering, mathematics, statistics, or physics. In general, we expect all applicants to have substantial programming experience preferably, though not necessarily, including exposure to object-oriented programming (in a language such as C++ or Java). Some experience of concurrent (i.e., multi-threaded) programming and computer graphics programming would also be useful.

Please see the following link for information on entry requirements: <https://www.scss.tcd.ie/postgraduate/msc-cs/application.php>

2.6. Course Structure and Modules

The MSc in Computer Science programme takes one calendar year to complete. In the first two semesters, students take a range of taught modules, and then from May to August work full-time on their individual dissertations. All students take a set of shared core modules and also specialise in one of four strands: Data Science, Future Networked Systems, Augmented & Virtual Reality and Intelligent Systems. The following section details the structure of each strand.

PLEASE NOTE: Unless it is by explicit permission of the course director, modules taken outside of those listed below will not be counted towards the credit required for the award of MSc in Computer Science. Students MUST take no more than a total of 30 ECTS of modules in any given semester.

2.6.1. Data Science Strand Structure

1st Sem. (Sep-Dec)	2nd Sem. (Jan-Mar)	3rd Sem. (May-Aug)
Machine Learning	Optimisation Algorithms for Data Analysis	Dissertation
Data Analytics (1)	Data Analytics (2)	
Data Visualisation	Applied Statistical Modelling	
Research Methods and Innovation	Security & Privacy	
Scalable Computing	Option 2	
Option 1	Option 3	

Option 1, 2 and 3 are elective modules selected from the other strands.

2.6.2. Future Networked Systems Strand Structure

Michaelmas Term (Sep-Dec)	Hilary Term (Jan-Apr)	Summer Term (May-Aug)
Machine Learning	Internet of Things	Dissertation
Urban Computing	Security & Privacy	
Advanced Software Engineering (1)	Advanced Software Engineering (2)	
Research Methods and Innovation	Distributed Systems	
Scalable Computing	Option 2	
Option 1	Option 3	

For Option 1 students should take CS7NS3 Next Generation Networks or an elective module selected from other strands. Option 2 and Option 3 are elective modules selected from the other strands.

2.6.3. Augmented & Virtual Reality Strand Structure

Michaelmas Term (Sep-Dec)	Hilary Term (Jan-Apr)	Summer Term (May-Aug)
Machine Learning	Real-time Rendering	Dissertation
Research Methods and Innovation	Augmented Reality	
Advanced Software Engineering (1)	Advanced Software Engineering (2)	
Computer Vision	Real-time Animation	
Computer Graphics*	Option 1	
Mathematics of Light & Sound	Option 2	

Computer Graphics is mandatory for all AVR students, but students who can demonstrate that they have covered this material elsewhere may choose an alternative option from other strands. Option 1 and 2 are elective modules selected from the other strands. AVR students can also choose the following modules from the School of Engineering provided there are no time-tabling conflicts: EE5C04 Speech and Audio Processing (5ECTS), EE5C1 Digital Media Systems (10 ECTS)

2.6.4. Intelligent Systems Strand Structure

Michaelmas Term (Sep-Dec)	Hilary Term (Jan-Apr)	Summer Term (May-Aug)
Machine Learning	Text Analytics	Dissertation
Information Retrieval & Web Search	Artificial Intelligence	
Knowledge & Data Engineering	Adaptive Applications	
Advanced Software Engineering (1)	Advanced Software Engineering (2)	
Research Methods and Innovation	Option 2	
Option 1	Option 3	

Option 1, 2 and 3 are elective modules selected from the other strands. IS strand students may choose LI7872 Formal Foundations of Linguistic Theories (10 ECTS) or LI7870 Advanced Syntactic Theory (10 ECTS), provided they have no time-tabling conflicts.

2.7. ECTS

The ECTS, or European Credit Transfer System, is a standardised measure of effort associated with modules in educational programmes across the European Union. 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. 1 credit represents 20-25 hours estimated student input, so a 10-credit module will be designed to require 200-250 hours of student input including class contact time, assessments and examinations. ECTS credits are awarded to a student only upon successful completion of the programme year.

2.8. Module Listing

The following is a list of all the modules offered in the MSc programme. Please Note that if there are insufficient numbers of students selecting a module in a particular academic year, that module may be withdrawn. Full details of individual modules are available at: <https://scss.tcd.ie/modules/>.

Module Code	Module Name	ECTS	Semester
CS7CS1	Research Methods and Innovation	5	1
CS7CS3	Advanced Software Engineering	10	1 and 2
CS7CS4	Machine Learning	5	1
CS7CS5	Dissertation	30	1, 2 and Summer
CS7DS1	Data Analytics	10	1 and 2
CS7DS2	Optimisation Algorithms for Data Analysis	5	2
CS7DS3	Applied Statistical Modelling	5	2
CS7DS4	Data Visualisation	5	1
CS7GV1	Computer Vision	5	1
CS7GV6	Computer Graphics	5	1
CS7GV2	Mathematics of Light and Sound	5	1
CS7GV3	Real-time Rendering	5	2
CS7GV4	Augmented Reality	5	2
CS7GV5	Real-time Animation	5	2
CS7IS1	Knowledge and Data Engineering	5	1
CS7IS2	Artificial Intelligence	5	2
CS7IS3	Information Retrieval & Web Search	5	1
CS7IS4	Text Analytics	5	2
CS7IS5	Adaptive Applications	5	2
CS7NS1	Scalable Computing	5	1
CS7NS2	Internet of Things	5	2
CS7NS3	Next Generation Networks	5	1

CS7NS4	Urban Computing	5	1
CS7NS5	Security and Privacy	5	2
CS7NS6	Distributed Systems	5	2
Additional Optional Modules for Augmented & Virtual Reality			
EE5C04	Speech and Audio Engineering	10	2
Additional Optional Modules for Future Networked Systems			
CSP55031	Open Reconfigurable Networks	5	2

2.9. Research Dissertation

The dissertation represents the most significant component of the MSc programme. Students will take on a substantial piece of work worth 30 ECTS and are expected to work part-time during teaching term and full-time over the summer on the dissertation project. The workload for this 30 ECTS module is estimated to be about 600-750 hours.

2.9.1. Dissertation Oral Examination

An oral exam will be held for each student submitting a dissertation. The oral exam will be held prior to the submission date of the final written dissertation report and will be attended by two examiners. Other members of academic staff and postgraduate students may also be invited to attend the oral examination. This exam is not explicitly marked but rather serves as a means of introducing examiners to the content of the dissertation before reading it and affording them the opportunity to ask questions relating to the work.

2.9.2. Ethical Approval

Any research project that involves human participation conducted through this course (for example, a questionnaire or survey, or system user-evaluation, etc.) must have independent review by a Research Ethics Committee before its commencement.

Individual applications are considered on their own merits. A basic principle is that prospective participants should be fully informed about the research and its implications for them as participants, with time to reflect on the possibility for participation prior to being asked to sign an informed consent form. For research associated with the School of Computer Science & Statistics, detailed information on the ethics application process can be found at <https://www.scss.tcd.ie/postgraduate/ethics/>.

Informing prospective participants fully includes declaring potential conflicts of interest that the researcher may have in conducting the research, detailing how participants may withdraw data associated with their participation from further analysis within the study, explaining the preservation of their anonymity within the study, warning them about potential consequences of discovery during the study of issues that would necessarily have precedence over assurances of anonymity, and so on.

It takes time to prepare an application for research ethics approval, to have the application considered, and to respond to feedback on the application where issues are raised. You should plan in your work for the time it takes to obtain research ethics approval.

Applications should be submitted via the TCD Online Ethics system. Any further queries regarding research ethics in SCSS can be directed to research-ethics@lists.scss.tcd.ie.

Applications must be reviewed and signed by your Supervisor. This confirms that the application is complete not that it has ethical approval. Unsigned or incomplete forms will be returned and may incur delays.

Retrospective approval will not be granted.

Please also note, research conducted in the School of Computer Science and Statistics should be undertaken with cognisance of the TCD Guidelines for Good Research Practice; see <http://www.tcd.ie/about/policies/assets/pdf/TCDGoodResearchPractice.pdf>

2.9.3. College Regulations for MSc Dissertations

Students should read the college regulations in the TCD Calendar - Part III, Section I (<http://www.tcd.ie/calendar/graduate-studies-higher-degrees/>) referring to the submission of Theses and Dissertations in TCD. Specific guidelines for the MSc in Computer Science dissertation are provided in the Appendices of this handbook.

2.10. Attendance Requirements

Graduate students on taught courses must normally attend College whenever instruction is scheduled for the course. Students must take part fully in the academic work of their class throughout the period of their course. The onus lies on students to inform themselves of the dates, times and venues of their lectures and other forms of teaching by consulting these timetables. This includes the research period, which takes place during the summer months.

2.11. Course Calendar

Event	Date
General Postgraduate Induction organised by Graduate Students Union	5 th - 9 th September, 2022
Course Induction Day	9 th September, 2022
Start of Semester 1 Teaching (Michaelmas Term)	12 th September, 2022
Semester 1 Reading Week	24 th - 30 th October, 2022
End of Semester 1 Teaching	5 th December, 2022
First Examination Session	12 th - 18 th December*, 2022
Start of Semester 2 Teaching (Hillary Term)	23 rd January, 2023
Semester 2 Reading Week	6 th - 12 th March, 2023
End of Semester 2 Teaching	16 th April, 2023
Second Examination Session	1 st May - 7 th May*, 2023
Dissertation Oral Exams	July - August, 2023 (TBC)
Dissertation Submission Deadline	August, 2023 (TBC)

*Note: extra contingency days may be required outside of the formal assessment/reassessment weeks. Please see Exams Office page for updates: <https://www.tcd.ie/academicregistry/exams/>

Please see the following link for further key dates applicable to all of college: <https://www.tcd.ie/calendar/academic-year-structure/>

Please the above dates may be subject to amendment during the year due. Students will be notified in writing through their TCD registered email addresses.

3. Assessment

Assessment regulations for the MSc in Computer Science programme are stated in the TCD Calendar Part III, Section VII (available at: <http://www.tcd.ie/calendar/graduate-studies-higher-degrees/>), which all students must familiarize themselves with.

The information below provides detail that is more specific for the MSc in Computer Science

3.1. Examinations

Modules undertaken in the 1st semester are examined at the end of the semester as specified in the course calendar above. Modules for the 2nd semester are examined in the annual examination period as specified in the course calendar in section 2.11 above. In general, the pass mark is 50% and the mark required for distinction is 70%.

3.2. Qualifications Achieved

The detailed regulations for this course are set out in Part III of the University Calendar - see link above.

Students who clear the taught component of the course ON THE FIRST ATTEMPT – will be permitted to PROCEED TO DISSERTATION and will work full-time on that dissertation in the 3rd Semester, submitting in August. If they clear the dissertation, they are eligible for the award of **MSc in Computer Science**.

Students who fail to clear the taught component of the course ON THE FIRST ATTEMPT will not be permitted to continue with their dissertation, but may undertake supplemental examinations and, if successful on the second attempt, be awarded a **Postgraduate Diploma in Computer Science**.

Both the MSc and PGDip are categorised as Level 9 qualifications according to the Irish National Framework for Qualifications NFQ (<http://www.nfq-qqi.com/>).

3.3. Individual Work and Plagiarism

It is important to highlight that all work submitted must be your own, and not taken directly from the internet or other sources. The College takes plagiarism seriously. The College regulations governing plagiarism in the college calendar and are copied in Appendix 5. You are expected to be familiar with these rules and to understand what is considered plagiarism.

Before beginning your first assignment, you must complete the online tutorial on avoiding plagiarism 'Ready, Steady, Write', located at https://www.tcd.ie/library/support/plagiarism/story_html5.html You are also encouraged to use the College Library's repository of resources on plagiarism and its avoidance at https://www.tcd.ie/library/support/plagiarism/story_html5.html

In the case of group work, groups should establish some mechanism to ensure that no member engages in plagiarism. Do not sign the Group Assignment Declaration if you have not assured yourself that the whole assignment is original.

The School reserves the right to use plagiarism detection technology to investigate suspicions of plagiarism. Any course work may be submitted to such software to assist in detection.

3.4. Court of Examiners

The Court of Examiners is chaired by the Director of Postgraduate Teaching & Learning and is comprised of the Course Director, Strand Leaders, External Examiner, Course Lecturers and Dissertation Supervisors.

There are two formal meetings of the Court of Examiners each year. The first meeting takes place following student annual examinations in May. The second meeting takes place in September following submission of student dissertations.

Results from the Court of Examiners are published via <http://my.tcd.ie>

3.5. Absence from Examinations

Postgraduate students who consider that illness may prevent them from attending an examination (or any part thereof) should consult their medical advisor and request a medical certificate for an appropriate period. If a certificate is granted, it must be presented to the student's Course Co-ordinator/Director within three days of the beginning of the period of absence from the examination. Such medical certificates must state that the student is unfit to sit examinations. Medical certificates will not be accepted in explanation for poor performance; where an examination has been completed, subsequent withdrawal is not permitted. Further details of procedures subsequent to the submission of medical certificates are available in course handbooks or from Course Co-ordinators/Directors.

Postgraduate students who consider that other grave cause beyond their control may prevent them from attending an examination (or any part thereof) must consult and inform their Course Co-ordinator/Director. The Course Co-ordinator/Director will then make representations to the Dean of Graduate Studies requesting that permission be granted for absence from the examination.

The acceptance of medical disability is entirely at the discretion of the Dean of Graduate Studies, who may ask for a report from the medical officers in charge of the Student Health Service. The report will be strictly confidential to the Dean of Graduate Studies.

Reference: Calendar Part III. Sec. III: <https://www.tcd.ie/calendar/graduate-studies-higher-degrees/>

4. Course Staff

The course is run by the School of Computer Science and Statistics. In the event of any queries, relating to the course, the administration or the facilities you should contact the Teaching Unit and/or the course director. For any specific queries, relating to module content or courseware you should contact the lecturer responsible directly.

4.1. Course Director

Professor Doug Leith
Email: doug.leith@tcd.ie
URL: <https://www.scss.tcd.ie/doug.leith/>

4.2. Strand Coordinators

Each course strand has an academic responsible for the coherence and running of the strand. These are as follows:

Strand	Strand Coordinator	Email
Augmented & Virtual Reality	Michael Manzke	Michael.Manzke@tcd.ie
Data Science	Mimi Zhang	Mimi.Zhang@tcd.ie
Future Networked Systems	Melanie Bouroche	bourocm@tcd.ie
Intelligent Systems	Gaye Stephens	Gaye.Stephens@tcd.ie

4.3. Course Administration

Course Administrator
Anastasia Komarovska
Email: teaching-unit@rt.scss.tcd.ie

F.10, O'Reilly Institute
School of Computer Science & Statistics
Trinity College
Dublin 2
Tel: +353 1 896 1765
Email: postgraduate@scss.tcd.ie

4.4. Other Key School Personnel

Director for Teaching and Learning (Postgraduate)
Prof. Ivana Dusparic
Email: ivana.dusparic@tcd.ie

4.5. External Examiner

The External Examiner is the independent academic, nominated by the college and is responsible for reviewing the course contents and for ensuring the appropriate quality levels across modules, coursework, exams and dissertations. The current External Examiner is Prof. Hamed Haddadi from Imperial College London.

4.6. Course Committee

A course committee, consisting of the course director, course administrator, executive officer, student representative and other members of academic staff, is responsible for the continued development of the program. The committee meets at least twice every academic year to review programme content and delivery, monitor student intake and report annually to the Postgraduate Teaching and Learning Committee. The current members of the committee are as follows:

MSc in Computer Science Course Committee	
Course Director (Chair)	Prof Doug Leith
Director of Teaching & Learning (Postgraduate)	Prof Ivana Dusparic
Committee Representative 1	Dr Mimi Zhang
Committee Representative 2	Ms Gaye Stephens
Committee Representative 3	Dr Mélanie Bourouche
Committee Representative 4	Dr Michael Manzke
Committee Representative 5	Dr Stefan Weber
Student Representative (1-4)	TBC (Elected Class Reps fill this role)
Course Executive Officer (Committee Secretary)	Teaching Unit

4.7. Dissertation Supervisors

An important component of the MSc programme is the completion of an independent dissertation on a research subject of your choosing. Each student has a supervisor to guide them through their dissertation and to assist with any difficulties the student might face. Supervisors (and dissertation topics) are chosen prior to the end of teaching week 10. A list of topics will be provided, but students are also encouraged to propose their own topics, which will be assessed for suitability by the course director.

Supervisors for the MSc dissertation are normally chosen from the School's lecturing staff. Although in most cases supervision is performed by lecturers who teach on the MSc, supervisors or co-supervisors may also occasionally be included from outside of the course lecturing staff. A full list of academic staff in the School Computer Science and Statistics qualified to supervise MSc projects is available at <https://projects.scss.tcd.ie/>

5. Facilities and Resources

5.1. Teaching Venues

Some of the teaching venues that you will use during your studies on the MSc are listed below:

Facility	Description
Lloyd Building LB 01- 08, LB107 / LB120	Lecture Halls 1-8 are located on the basement floor of the Lloyd Building. Seminar rooms 1.07 and 1.20 are on the 1st floor.
Hamilton Building	The Hamilton building houses the main technical library and a number of lecture halls that may occasionally be used by students.
Phoenix House, South Leinster Street	This facility on the 4 th Floor of Phoenix house was prepared as the primary learning space for the course and houses labs of workstations, group meeting spaces and special equipment room and a lecture theatre for small modules.
LG37	The O'Reilly Building LG.37 lab is located on the ground floor of the O'Reilly Building. It is accessed via the door on the outside of the building (you will need to use your student card to gain access).
LCR	O'Reilly Building Large Conference Room, located on the main floor (1 st) of the O'Reilly Building directly opposite the Computer Science reception desk.

5.2. Open Lab Access and Research Facilities

MSc in Computer Science students have access to a dedicated space on the fourth floor of Phoenix House, South Leinster Street. This space includes a large open lab, glass meeting room annexes, a small seminar room and a special equipment lab.

5.3. IT and Support Infrastructure

Note that TCD's Information System Services (ISS) Department looks after the computer facilities in the college in general, including your connection from home. Full details on the college Information Systems support are available at <http://www.tcd.ie/itservices/> (Email: itservicedesk@tcd.ie)

The School of Computer Science and Statistics also has a local computer support group that serves its specialised needs. For details see: <http://support.scss.tcd.ie/> (Email: help@rt.scss.tcd.ie)

5.4. Student Accounts

When you register in college, you are given a username and password. This has been allocated to you by ISS. The Computer Science system administrators get a copy of these details and set up a local SCSS account for you in addition to your college wide identity. This account will have the same username and password that was given to you at registration.

Once you have your Computer Science account you can use the computers in the School of Computer Science Statistics. You will also be able to use labs and computers outside of the school. Labs that are non-computer science are known as Public Access Labs. With each of these accounts (the ISS and CS accounts), you will receive a storage space allocation which you can use to store your files. This storage is backed up and should be used for all-important files. To access this storage you will use a drive (often the U: drive on PCs). It is also highly recommended that you purchase a USB drive for your own personal use and to ensure you make backups of all-important files on this USB drive. All machines in the College network are subject to periodic wiping and reformatting (note this

does not apply to files stored in your CS or ISS account space), so make sure not to rely on storage other than your account storage or your own USB drive.

Please see the following link to see where the Public Access Labs are located within college:

<https://www.tcd.ie/itservices/facilities/kb/map.php>

For a full set of policies and rules & regulations, relating to the use of College IT facilities please visit the IS Services policy pages at: <http://www.tcd.ie/itservices/general/policies.php>

5.5. Accessing Online Course Materials, Meetings and Talks

Online live or recorded classes and course materials are made available, largely through the Blackboard Learning Management System, accessible to all registered TCD students and staff through the link <https://mymodule.tcd.ie>.

Some lecturers may require alternative systems to deliver their modules online on a case-by-case basis. Individual lecturers will notify students of any such differences in their modules.

Microsoft Teams is employed by the college for internal communications including some class and teleconferenced meetings. Additionally, this software may sometimes need to be used for voice calls in lieu of TCD Phone Extensions, while staff are required to work from home. All MSc students should have access to Teams and other elements of the MS Office suite by using their TCD email id (<user>@tcd.ie) and TCD account password.

5.6. Email

Note that you will have email accounts provided by **College** IT Services (username@tcd.ie). Important messages, including formal course related announcements, may be sent to this account, so you must ensure that you regularly check your email at this address.

5.7. Wireless LAN

There are a number of WIFI networks operating within the College Campus. For further information on registration for wireless access across college please visit the IS Services website at:

<http://www.tcd.ie/itservices/network/tcdconnect.php>

A more dedicated service albeit with more limited coverage in SCSS buildings is provided specifically for Postgraduates in the School of computer Science and Statistics. See:

<https://support.scss.tcd.ie/COMPSCIwireless2> (login required).

5.8. Student Owned Equipment

You are encouraged to own a laptop and to use this as desired within the lab. Much of the software used during the course is available, free of charge, either online with your TCD user ID or from the School of Computer Science and Statistics.

It is also strongly encouraged that you make your own personal backups of any important files or data. Make sure not to leave any personal belongings in the lab after you leave. The College will not be liable for any loss or damage to personal belongings or data stored on college owned machines.

5.9. Course Website

The Course website is located at <https://www.scss.tcd.ie/postgraduate/msc-cs/> and is publicly accessible. The website contains up to date information about course contents, the course timetable and important dates, and also includes a news section.

During the course of the year, you may also be required to work with restricted access pages, which you should be able to access with your CS or TCD username.

5.10. School Software Resources

Hardware and software support for lab machines related to the MSc programme is provided by the School. In all cases, you can email help@rt.scss.tcd.ie. The TCD helpdesk (helpdesk@tcd.ie) also provides student IT support for machines and networks provided to the college at large.

For details see: <http://support.scss.tcd.ie/>

5.11. College Software Resources

The college provides a more general collection of resources in addition to those provided by the school, including Microsoft Azure Dev Tools, Microsoft 365 etc.

For details: https://www.tcd.ie/itservices/software/kb/student_software.php

6. General Information

6.1. Map of Trinity College

The map in Figure 6.1 below shows the east side of the Trinity College campus and the locations of the main buildings used by MSc in Computer Science Students. For other maps of TCD see: <http://www.tcd.ie/Maps/>

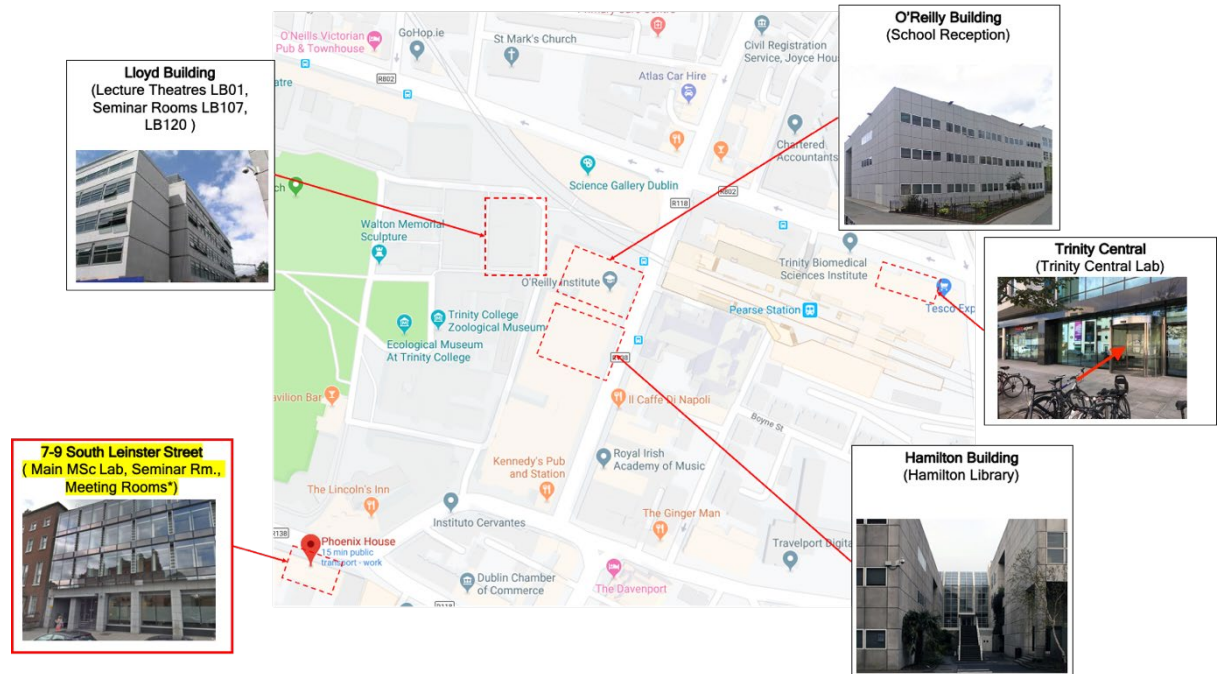


Figure 6.1: Map of teaching facilities available to the MSc in Computer Science

6.2. Swipe Card Access

Your student ID card acts as a door access card and the locations for which you should have access are encoded with the card on registration. There can be administrative errors in this assignment which may result in your not having access to a required room. In such cases please contact the associated lecturer responsible or contact the course director and the card can be quickly updated. The update process does not require handing in your card.

REMEMBER: YOU MUST NEVER ALLOW ANY UNAUTHORISED PERSONNEL INTO ANY BUILDING ON CAMPUS WITH YOUR SWIPE CARD OR ACCESS CODE.

6.3. 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 at:
https://www.tcd.ie/Senior_Tutor/postgraduateadvisory/

Where?

The PAS is located on the second floor of House 27. We are open from 8:30am – 4:30pm, 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 do not hesitate to get in touch with us.

6.4. Graduate Students Union

Located on the second floor of House Six, the Graduate Students' Union (GSU) is an independent body within College that represents postgraduate students throughout College. Upon registration, all postgraduates are automatically members. It is run by two full-time sabbatical officers. As the head and public face of the Union, Shane is responsible for strategy and policy formulation, whilst sitting on a wide range of committees. Madhav is the Union's Education and Welfare Officer and advises students on matters such as academic appeals and supervisor relationships. He is also here to help on more personal matters, such as financial concerns, illness and bereavement. Any discussions about such concerns are treated with the strictest confidentiality. You can contact the GSU at either: president@tcdgsu.ie or vicepresident@tcdgsu.ie

6.5. University Policies and Regulations

The following are links to some key University regulations, policies and procedures

- A comprehensive listing of Academic Policies is available at: <http://www.tcd.ie/teaching-learning/academic-policies/>
- Student Complaints Procedure:
https://www.tcd.ie/about/policies/160722_Student%20Complaints%20Procedure_PUB.pdf
- Dignity and Respect Policy: <https://www.tcd.ie/equality/policy/dignity-respect-policy/>

6.6. Emergency Procedures

In the event of an emergency, dial **Security Services on extension 1999**.

Security Services provide a 24-hour service to the college community, 365 days a year. They are the liaison to the Fire, Garda and Ambulance services and all staff and students are advised to always telephone extension 1999 (+353 1 896 1999) in case of an emergency.

Should you require any emergency or rescue services on campus, you must contact Security Services. This includes chemical spills, personal injury or first aid assistance.

It is recommended that all students save at least one emergency contact in their phone under ICE (In Case of Emergency).

Appendix 1: Useful Web Links

There are many useful sites in TCD. Here are a number of them. If you find any other, TCD links that you think would be useful for the class please e-mail the Teaching Unit (teaching-unit@rt.scss.tcd.ie).

Site	Address
Course Website	https://www.scss.tcd.ie/postgraduate/msc-cs/
Teaching and Learning (incl. Modules Listing)	https://teaching.scss.tcd.ie/msc-in-computer-science/
Projects Website	https://projects.scss.tcd.ie/
TCD Website	http://www.tcd.ie/
TCD Maps	http://www.tcd.ie/maps/
Library	http://www.tcd.ie/library/
Information System Services	http://www.tcd.ie/students/supports-services/
Graduate Studies	http://www.tcd.ie/Graduate_Studies
Student Counselling	http://www.tcd.ie/Student_Counselling/
Disability Service	https://www.tcd.ie/disability/current/Postgrad.php
Health and Safety Guidance	https://ems.tcd.ie/assets/documents/pdf/Health%20&%20Safety%20Guidance%20Manual%202016%202017.pdf
School of Computer Science and Statistics	http://www.scss.tcd.ie/
People Finder	http://peoplefinder.tcd.ie/
Graduate Students Union	https://www.tcdgsu.ie/
Global Relations	http://www.tcd.ie/globalrelations/
General Listing of Student Services	http://www.tcd.ie/students/supports-services/

Extra-Curricular Activities:

TCD Societies	http://trinitysocieties.ie/
TCD Sports Clubs	http://www.tcd.ie/Sport/student-sport/clubs/

Appendix 2: Process for Submission of MSc in Computer Science Dissertations

Step 1. Print off (at least) two copies of your dissertation and send them to the binder. PLEASE NOTE: You are required to submit **one soft bound** copy of your dissertation.

Step 2. **Electronic versions** of the dissertations will be submitted through Blackboard. Submission on Blackboard will be open in August. Students will be notified of the full details of the electronic submission.

Step 3. Collect your bound dissertations from the binder.

Step 4. Sign the declarations in of your dissertation.

Additional notes:

- Do not leave your dissertation in a mailbox or with anyone else, as various checks are necessary before the dissertation is accepted.
- After all requirements are completed you will be required to ensure that all books and equipment from the lab or borrowed from the School have been returned, and that you have taken any files that you wish to retain (all PCs will be erased shortly after the submission deadline for dissertations). This will be a condition of your degree award and failure to return or replace equipment may result in any award being withheld.

And the bottom line:

The deadline is absolute. If you miss the deadline, you will not be eligible for the award of an MSc.

Appendix 3: Regulations for Candidates on Submission of MSc Dissertations

Regulations for candidates on submission of an MSc dissertation in Computer Science

1. Methods of production

Use a computer/word processor and print your manuscript using a laser or inkjet printer. Colour may be used in photographs, figures, graphs, etc. but you need to make sure that when the colour pages are photocopied into black and white that they make sense and match the text.

2. Typescript and illustrations

The dissertation must be printed on good quality, A4 white paper. The type must be black and not less than 10 point. Use one and a half or double spacing between lines. You may print double-sided, but please ensure that the paper is of sufficient quality not to show through. The margin on the left-hand side of the page should be at least 2.54 cm to allow for binding.

3. Pagination

Pages should be numbered consecutively through the dissertation starting with the first page following the table of contents and including appendices but excluding photographs and/or diagrams, which are not embodied in the text. The page numbers should be located centrally at the bottom of the page.

4. Length

There is no minimum length for an MSc dissertation at TCD, but typically, this is expected to be the order of 20,000 words.

5. Cover

The title must appear in gold lettering and be centred on the front cover of the dissertation. The degree for which the dissertation has been submitted, MSc in Computer Science, the year, and the name of the candidate, in that order, should be lettered in gold, in 24pt or larger type, down the spine, so as to be readable when the volume is lying flat with the front cover uppermost. *Most Binders in Dublin will be aware of the TCD format for binding dissertations.*

There is no specific format for the soft bound copy, which must also be submitted. This is only used for internal marking purposes.

6. Title page

Include a title page giving the following information in the order listed:

- the full title of the dissertation (as on the front cover) and the subtitle if any (ensure that the title describes the content of the dissertation accurately and concisely),
- the full name of the author,
- the qualification for which the dissertation is submitted i.e. MSc in Computer Science (Mention Strand Name Here),
- the name of the institution to which the dissertation is submitted (i.e. University of Dublin),
- the year of submission (e.g. 2005).

An example title page is included following these regulations.

7. Declaration

The dissertation **must** contain immediately after the title page:

- a declaration that it has not been submitted as an exercise for a degree at this or any other University,

- a 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
- a signed statement that the candidate agrees that the Library may lend or copy the dissertation upon request.

Example declarations are included as an appendix to this document.

8. Acknowledgments

Any acknowledgments should be on the page following the declaration.

9. Abstract

One copy of an abstract, printed on a single sheet of A4 paper, must be submitted loose with each copy of the dissertation. The abstract must contain the title of the dissertation, the author's full name, title of degree, supervisor name and year.

10. Table of contents

A table of contents should immediately follow the acknowledgements. It should list in sequence, with page numbers, all relevant subdivisions of the dissertation, including the list of abbreviations, titles of chapters and their sections and subsections; the list of references; the bibliography etc. This should be produced automatically.

11. Tables and illustrative material

Lists of tables and illustrations should follow the table of contents. All tables, photographs, diagrams etc., in the order in which they occur in the text, should be so listed. This should be produced automatically.

12. Abbreviations

Where abbreviations are used a key should be provided on a separate page.

13. References

Systematic and complete reference to sources used and a classified list of all sources used must be included in the dissertation. The titles of journals preferably should not be abbreviated; if they are, abbreviations must comply with an internationally recognised system.

14. Submission

Dissertations must be submitted to ***the Computer Science Office in the O'Reilly Institute no later than the closing date for submissions. The phone number for this office is 8961765.*** An electronic version of the dissertation should be submitted through Blackboard.

15. Supporting Materials

Any source code, executables, videos and other relevant assets should be included in a CD attached to the back cover of the dissertation.

16. The following pages contain examples of title and declaration pages. Text within angle brackets should be replaced appropriately.

<Title of the dissertation>

<Your name in full>

A dissertation submitted to the University of Dublin,
in partial fulfilment of the requirements for the degree of
Master of Science in Computer Science (Mention Name of Strand Here)

<Year of submission>

Declaration

I declare that the work described in this dissertation is, except where otherwise stated, entirely my own work, and has not been submitted as an exercise for a degree at this or any other university.

Signed: _____
<Your name in full>
<Date>

Permission to lend and/or copy

I agree that the Trinity College Library may lend or copy this dissertation upon request.

Signed: _____
<Your name in full>
<Date>

Appendix 4: Plagiarism

GENERAL

It is clearly understood that all members of the academic community use and build on the work and ideas of others. It is commonly accepted also, however, that we build on the work and ideas of others in an open and explicit manner, and with due acknowledgement. Plagiarism is the act of presenting the work or ideas of others as one's own, without due acknowledgement. Plagiarism can arise from deliberate actions and also through careless thinking and/or methodology. The offence lies not in the attitude or intention of the perpetrator, but in the action and in its consequences.

It is the responsibility of each student to ensure that he/she does not commit plagiarism. Plagiarism is considered academically fraudulent, and an offence against academic integrity that is subject to the disciplinary procedures of the University.

EXAMPLES OF PLAGIARISM

Plagiarism can arise from actions such as:

- a) copying another student's work;
- b) enlisting another person or persons to complete an assignment on the student's behalf;
- c) procuring, whether with payment or otherwise, the work or ideas of another;
- d) quoting directly, without acknowledgement, from books, articles or other sources, either in printed, recorded or electronic format, including websites and social media;
- e) paraphrasing, without acknowledgement, the writings of other authors.
- f) Examples (d) and (e) in particular can arise through careless thinking and/or methodology where students:
 - (i) fail to distinguish between their own ideas and those of others;
 - (ii) fail to take proper notes during preliminary research and therefore lose track of the sources from which the notes were drawn;
 - (iii) fail to distinguish between information which needs no acknowledgement because it is firmly in the public domain, and information which might be widely known, but which nevertheless requires some sort of acknowledgement;
 - (iv) come across a distinctive methodology or idea and fail to record its source

All the above serve only as examples and are not exhaustive.

PLAGIARISM IN THE CONTEXT OF GROUP WORK

Students should normally submit work done in co-operation with other students only when it is done with the full knowledge and permission of the lecturer concerned. Without this, submitting work which is the product of collaboration with other students may be considered to be plagiarism.

When work is submitted as the result of a group project, it is the responsibility of all students in the group to ensure, so far as is possible, that no work submitted by the group is plagiarised. In order to avoid plagiarism in the context of collaboration and groupwork, it is particularly important to ensure that each student appropriately attributes work that is not their own.

SELF-PLAGIARISM

No work can normally be submitted for more than one assessment for credit. Resubmitting the same work for more than one assessment for credit is normally considered self-plagiarism.

AVOIDING PLAGIARISM

Students should ensure the integrity of their work by seeking advice from their lecturers, tutor or supervisor on avoiding plagiarism. A general set of guidelines for students on avoiding plagiarism is available at <http://tcd-ie.libguides.com/plagiarism>.

If plagiarism as referred to above is suspected, the Director of Teaching and Learning (Postgraduate) or his/her designate will arrange an informal meeting with the student, the student's Supervisor and/or the academic staff member concerned, to put their suspicions to the student and give the student the opportunity to respond. Students may nominate a Graduate Students' Union representative or PG advisor to accompany them to the meeting. The student will be requested to respond in writing stating his/her agreement to attend such a meeting and confirming on which of the suggested dates and times it will be possible for them to attend. If the student does not in this manner agree to attend such a meeting, the Director of Teaching and Learning (Postgraduate), or designate, may refer the case directly to the Junior Dean, who will interview the student and may implement the procedures as referred to in Section 5 of the University Calendar (Other General Regulations).

If the Director of Teaching and Learning (Postgraduate) forms the view that plagiarism has taken place, he/she must decide if the offence can be dealt with under the summary procedure set out below. In order for this summary procedure to be followed, all parties noted above must be in agreement and must state their agreement in writing to the Director of Teaching and Learning (Postgraduate) or designate. If one of the parties to the informal meeting withholds his/her written agreement to the application of the summary procedure, or if the facts of the case are in dispute, or if the Director of Teaching and Learning (Postgraduate) feels that the penalties provided for under the summary procedure below are inappropriate given the circumstances of the case, he/she will refer the case directly to the Junior Dean, who will interview the student and may implement the procedures set out in Section 5 of the University Calendar (Other General Regulations).

If the offence can be dealt with under the summary procedure, the Director of Teaching and Learning (Postgraduate) will recommend one of the following penalties:

- (a) Level 1: Student receives an informal verbal warning. The piece of work in question is inadmissible. The student is required to rephrase and correctly reference all plagiarised elements. Other content should not be altered. The resubmitted work will be assessed and marked without penalty;
- (b) Level 2: Student receives a formal written warning. The piece of work in question is inadmissible. The student is required to rephrase and correctly reference all plagiarised elements. Other content should not be altered. The resubmitted work will receive a reduced or capped mark depending on the seriousness/extent of plagiarism;
- (c) Level 3: Student receives a formal written warning. The piece of work in question is inadmissible. There is no opportunity for resubmission.

Provided that the appropriate procedure has been followed and all parties are in agreement with the proposed penalty, the Director of Teaching and Learning (Postgraduate) should in the case of a Level 1 offence, inform the Course Director and, where appropriate, the Course Office. In the case of a Level 2 or Level 3 offence, the Dean of Graduate Studies must be notified and requested to approve the recommended penalty. The Dean of Graduate Studies may approve or reject the recommended penalty, or seek further information before making a decision. If he/she considers that the penalties provided for under the summary procedure are inappropriate given the circumstances of the case, he/she may also refer the matter directly to the Junior Dean who will interview the student and may implement the procedures as referred to under conduct and college. Notwithstanding his/her decision, the Dean of Graduate Studies will inform the Junior Dean of all notified cases of Level 2 and Level 3 offences accordingly. The Junior Dean may nevertheless implement the procedures as set out in Section 5 of the University Calendar (Other General Regulations).

If the case cannot normally be dealt with under summary procedures, it is deemed to be a Level 4 offence and will be referred directly to the Junior Dean. Nothing provided for under the summary procedure diminishes or prejudices the disciplinary powers of the Junior Dean under the 2010 Consolidated Statutes.

Appendix 5: Assessment Submission Forms



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

School of Computer Science and Statistics

Assessment Submission Form

Student Name	
Student ID Number	
Course Title	
Module Title	
Lecturer(s)	
Assessment Title	
Date Submitted	
Word Count	

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

I declare that the assignment being submitted represents my own work and has not been taken from the work of others save where appropriately referenced in the body of the assignment.

Signed Date

Author Declaration for Group Assignments

Assignment Number: _____

Module Number: _____

Title of Assignment:

Word Count: _____

Student Number	Student Name	Nature of Contribution	Percentage contribution

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

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

We declare that this assignment, together with any supporting artefact is offered for assessment as our original and unaided work, except in so far as any advice and/or assistance from any other named person in preparing it and any reference material used are duly and appropriately acknowledged.

We declare that the percentage contribution by each member as stated above has been agreed by all members of the group, and reflects the actual contribution of the group members.

Signed and dated:
