



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

Orientation Meeting

MSc/PGDip in Computer Science

- Augmented and Virtual Reality
- Data Science
- Intelligent Systems
- Future Network Systems

Dr. John Dingliana

Co-Director, MSc in Computer Science

School of Computer Science and Statistics [SCSS]

THESE SLIDES:



Course Team and School

Strand Leaders:

- Augmented and Virtual Reality: Michael Manzke
- Data Science: Mimi Zhang
- Future Networked Systems: Vinny Cahill
- Intelligent Systems: Gaye Stephens



Course Director: Doug Leith

Co-director (for admissions): John Dingliana



SCSS Director of Postgraduate Teaching and Learning : Gavin Doherty

Head of School : Gregory O'Hare

MSc CS Course Administrator: Jack Ferguson

General contact email for teaching administration [ticketed system] : teaching-unit@rt.scss.tcd.ie

Technical Help – School Resources: help@rt.scss.tcd.ie | <https://support.scss.tcd.ie> [scss network, login required]

Further details: <https://www.tcd.ie/scss/people/>

THESE SLIDES:



This session

- ◆ Course objectives, structure and timeline
- ◆ Assessment Regulations
- ◆ Where to go for help
- ◆ Facilities and Resources
- ◆ Questions

12:00 noon : General School Orientation (Head of School and Director for Teaching and Learning –Postgraduate)

2:00pm : Lunch Reception ORI Foyer

The screenshot shows the Trinity College Dublin website. The top navigation bar includes links for Students, Courses, Research, Faculties & Schools, Alumni, A-Z, and Gaeilge. Below this is a search bar. The main header for the School of Computer Science and Statistics includes a menu icon and links for Home, Courses, Research, People, Industry, News and Events, and Contact. The main content area features a large image of three students in a study area with a laptop, overlaid with the text "Postgraduate Courses". Below this is a breadcrumb trail: COURSES / POSTGRADUATE. The main heading is "MSc in Computer Science". There are three featured course tiles: "Data Science" with an image of a person at a computer, "Future Networked Systems" with a cityscape and network diagram, and "Intelligent Systems" with an image of a person's face with mathematical formulas. To the right of these tiles is a box titled "THESE SLIDES:" containing a large QR code.

SCSS Teaching Web Pages

<https://teaching.scss.tcd.ie/msc-in-computer-science/>

- Course/Module Information
- These Slides
- Link to Course Handbook

TCD Calendar Part III

<https://www.tcd.ie/calendar/graduate-studies-higher-degrees/>

- Formal College Regulations (including this course)

Also: <https://www.tcd.ie/about/policies/>

General Information ▾ Undergraduate ▾ Postgraduate ▾ Visiting Students Contact Information

Module Directory

Semester 1 Modules

CS7CS4 – Machine Learning

CS7CS6 – Research and Innovation

CS7DS4 – Data Visualisation

CS7GV1 – Computer Vision

CS7GV2 – Mathematics of Light and Sound

CS7GV6 – Computer Graphics

CS7IS1 – Knowledge and Data Engineering

CS7IS3 – Information Retrieval and Web Search

CS7NS1 – Scalable Computing

CS7NS3 – Next Generation Networks

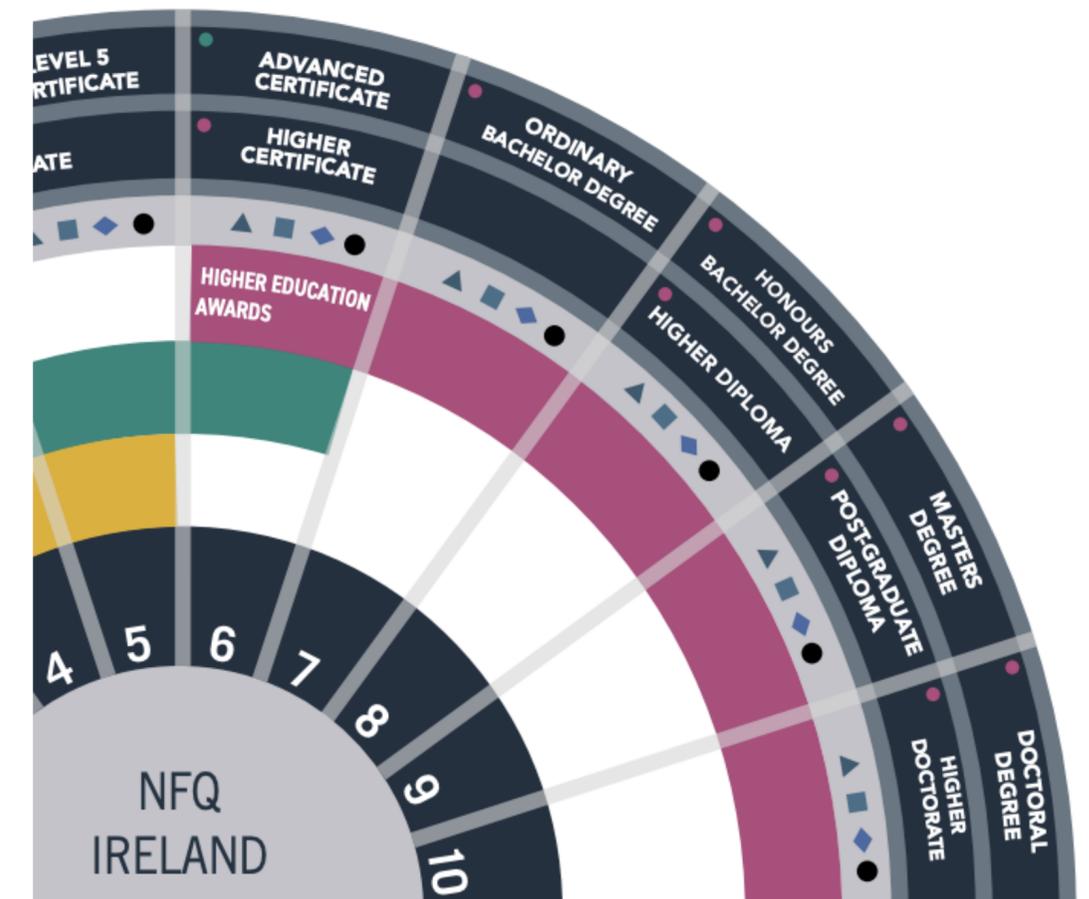


Level 9, National Framework of Qualifications

- knowledge and comprehension **beyond Bachelor's level and at the forefront of a field of learning**
- **critical awareness of current problems** and new insights, new tools and new processes within their field of learning
- ability to **apply knowledge and critical awareness in the context of research** in broader or multidisciplinary areas related to their fields of study
- ability to **integrate knowledge** and handle complexity, to formulate judgements with incomplete or limited information
- ability to **lead or initiate activity**, and take responsibility for the intellectual activities of individuals or groups
- ability to **communicate conclusions, and knowledge**, rationale and processes underpinning these, to specialist and non-specialist audiences
- **learning skills to continue to study** in a self-directed or autonomous manner.

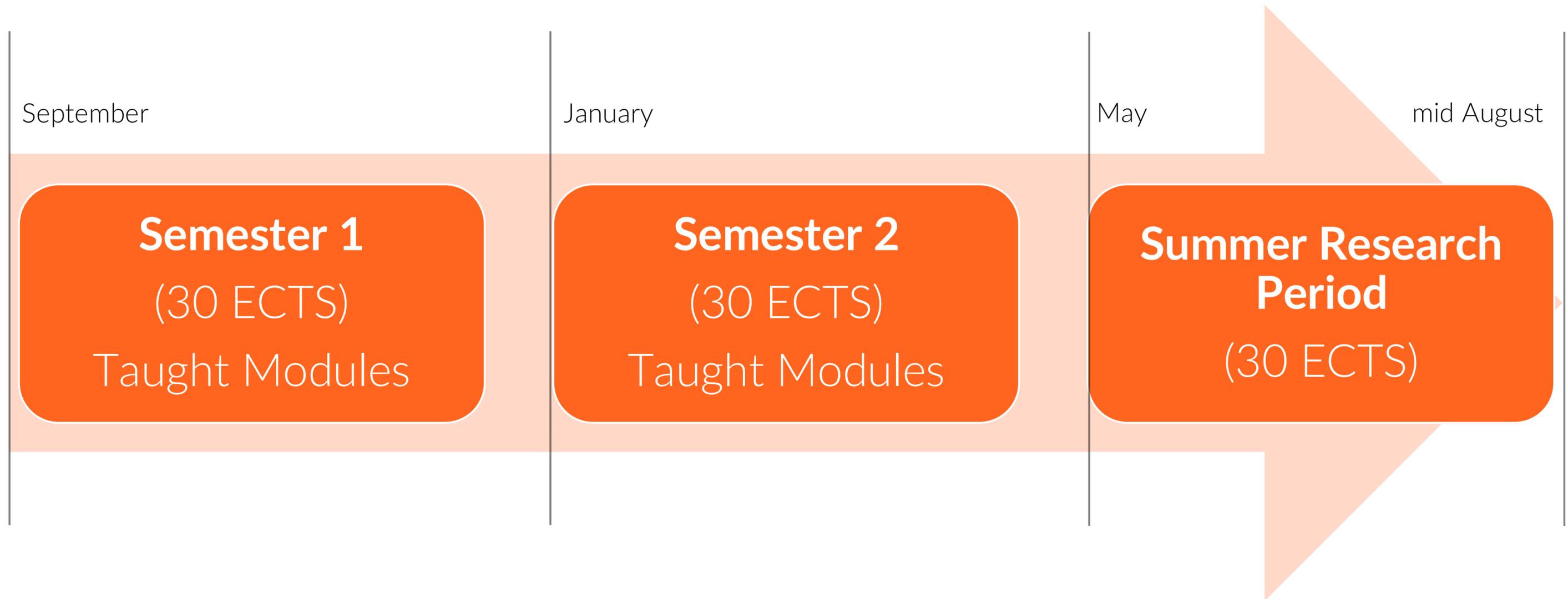
PGDip = 60 credits

MSc = 60 + 30 (Research) credits



<http://www.nfq-qqi.com/>

The Year Ahead



30 ECTS (European Credit Transfer Systems)
is equivalent to ~ 600 to 750 hours of Work

**N.B. 90 ECTS must be from
approved modules for the course.**

Course Structure

- **Core modules:** Mandatory for all strands
- **Strand Modules:** Mandatory for specific strand
- **Electives:** Options chosen from shared pool across all strands
- **Dissertation:** Specific to each student

SEMESTER 1	SEMESTER 2	SUMMER RESEARCH PERIOD
Machine Learning [5 ECTS]	Strand Module 4 [5ECTS]	Dissertation [30 ECTS]
Research and Innovation Methods [5 ECTS]	Strand Module 5 [5ECTS]	
Strand Module 1 [10 ECTS]		
Strand Module 2 [5ECTS]	Strand Module 6 [5ECTS]	
Strand Module 3 [5ECTS]	Option 2	
Option 1	Option 3	

Note: that a 10 ECTS options module can be taken instead of two 5 ECTS options

TCD Academic Year Structure

[<https://www.tcd.ie/calendar/academic-year-structure/>]

Semester 1 Teaching Begins 09.09.24

Reading Week 21.10.24 : 7th week in each semester free of classes

Semester 1 Teaching Ends 29.11.24

Semester 1 Exams*

Semester 2 Teaching Begins 20.01.25

Reading Week 03.03.25 : 7th week in each Semester is free of classes

Semester 2 Teaching Ends 07.04.25

Semester 2 Exams*

Dissertation Oral Examinations: ~ end Jul – start Aug (TBC)

Dissertation Deadline: mid-Aug (TBC)

Academic Calendar Week	Week beginning	2024/25 Academic Year Calendar		Term / Semester
		UG continuing years / PG all years	UG new first years	
1	26-Aug-24	Reassessment * (Semesters 1 & 2 of 2023/24)		← Michaelmas Term begins/Semester 1 begins
2	02-Sep-24	Orientation (Postgraduate, Visiting & Erasmus); Marking/Results		
3	09-Sep-24	Teaching and Learning		← Michaelmas teaching term begins
4	16-Sep-24	Teaching and Learning	Orientation (JF UG)	
5	23-Sep-24	Teaching and Learning	Teaching and Learning	
6	30-Sep-24	Teaching and Learning	Teaching and Learning	
7	07-Oct-24	Teaching and Learning	Teaching and Learning	
8	14-Oct-24	Teaching and Learning	Teaching and Learning	
9	21-Oct-24	Study/Review	Study/Review	
10	28-Oct-24	Teaching and Learning (Monday, Public Holiday)	Teaching and Learning (Monday, Public Holiday)	
14	25-Nov-24	Teaching and Learning	Teaching and Learning	
15	02-Dec-24	Revision ⁺¹	Revision ⁺¹	
16	09-Dec-24	Assessment ⁺¹	Assessment ⁺¹ ^{**}	← Michaelmas term ends Sunday 15 December 2024/Semester 1 ends
17	16-Dec-24	Christmas Period - College closed	Christmas Period - College closed	
18	23-Dec-24	24 December 2024 to 1 January 2025 inclusive	24 December 2024 to 1 January 2025 inclusive	
19	30-Dec-24			
20	06-Jan-25	Foundation Scholarship Examinations [^]		
21	13-Jan-25	Marking/Results	Marking/Results	← Hilary Term begins/Semester 2 begins
22	20-Jan-25	Teaching and Learning	Teaching and Learning	← Hilary teaching term begins
31	24-Mar-25	Teaching and Learning	Teaching and Learning	
32	31-Mar-25	Teaching and Learning	Teaching and Learning	
33	07-Apr-25	Teaching and Learning	Teaching and Learning	
34	14-Apr-25	Revision (Friday, Good Friday)	Revision (Friday, Good Friday)	← Hilary Term ends Sunday 20 April 2025
35	21-Apr-25	Assessment ⁺² (Monday, Easter Monday)	Assessment ⁺² (Monday, Easter Monday)	← Trinity Term begins
36	28-Apr-25	Trinity Week (Monday, Trinity Monday) ⁺²	Trinity Week (Monday, Trinity Monday) ⁺²	
37	05-May-25	Marking/Results (Monday, Public Holiday)	Marking/Results (Monday, Public Holiday)	
38	12-May-25	Marking/Results	Marking/Results	
39	19-May-25	Marking/Results	Marking/Results	
40	26-May-25	Research	Research	← Trinity Term ends Sunday 1 June 2025/Semester 2 ends
52	18-Aug-25	Research +	Research +	

* Note: additional/contingency days may be required outside of the formal assessment/reassessment weeks.

** Note: it may be necessary to hold a small number of JF examinations/assessments outside of semester 1.

[^] Note: it may be necessary to hold some examinations/assessments in the preceding week.

⁺¹ Note: semester 1 Assessment session: 09-Dec-24 to 14-Dec-24 inclusive (contingency dates during week beginning 02-Dec-24 TBC)

⁺² Note: semester 2 Assessment session: 22-Apr-25 to 02-May-25 inclusive (includes Council approved contingency dates: 29-Apr-25 to 02-May-25)

+ Note: the academic year structure is due to be reviewed during 2024/25 - any changes will be notified should Council approve any change.

Individual research project, under the supervision of an academic

Partially supported by CS7CS6 Research and Innovation Methods module in Semester 1

Bulk of dissertation work typically takes place over the summer, but you **start now!**

- Selection of supervisors and research areas in the **next three weeks** [see dates below]
- Develop a *research question*
- Dissertation submitted in August

Single largest piece of work in your M.Sc. (worth 33% of the overall award), important to work on it all year.

Listing of Projects : <https://projects.scss.tcd.ie>

N.B. This list is not exhaustive (many projects evolve through discussion). If you can't find a listed project available that suits, find a supervisor in the correct area and contact them to see if they have supervision capacity

Examples of past projects: <https://publications.scss.tcd.ie/theses/diss/>



important

Deadline of Project Registrations (MSc CS) – Friday, 27th September 2024

Allocation of Remaining project students to supervisors – Friday, 4th October 2024

SCSS Research Areas

Artificial Intelligence

Digital Content Technology

Graphics, Vision, Augmented and Virtual Reality

Future Networks and IoT

Future Cities

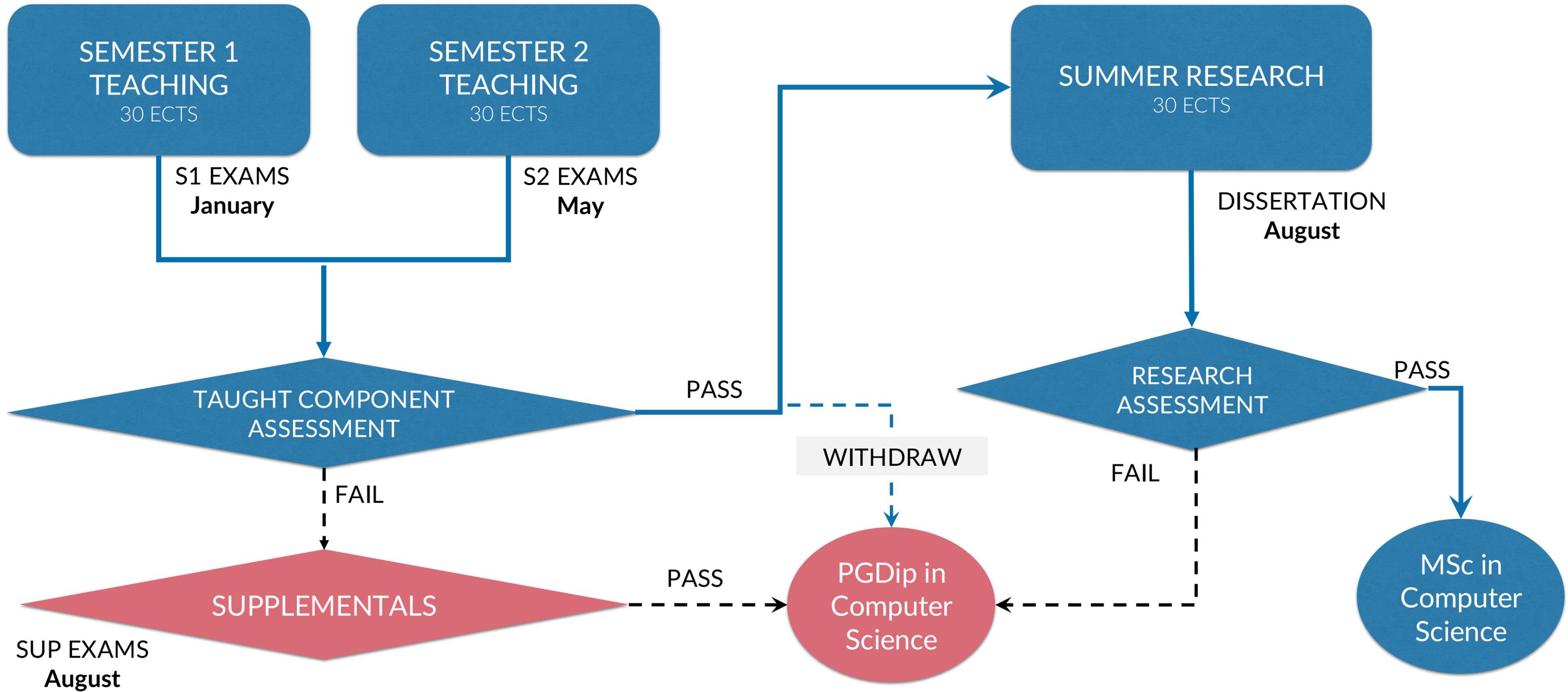
Security, Privacy and Data Protection

Statistics and Data Science

Software Performance and Correctness

<https://scss.tcd.ie/research/>

Course Progression



Key Assessment Regulations

Pass mark is $\geq 50\%$ for all modules including the dissertation

Mark of $\geq 70\%$ is considered a Distinction mark [marks above 80 are rare!]

Taught Component

- Must pass all modules (60 ECTS) in FIRST ATTEMPT to be allowed to do dissertation and be eligible for MSc
- Up to 10 ECTS of failed modules may be PASSED BY COMPENSATION iff the mark in these modules is $\geq 40\%$
- Otherwise you may attempt supplementals to pass failed modules for award of PGDip

Research Component

- Must pass dissertation (30 ECTS) in first attempt to get MSc
- If you fail the dissertation you get PG Dip

Addendum: new regulation (for 2023-) if you fail the dissertation with a grade between 40–49% you may apply to the school to repeat the dissertation. But: mark is capped at 50%, and fees may apply.

MSc with Distinction: Must obtain $\geq 70\%$ overall in taught modules with no modules under 50% AND obtain $\geq 70\%$ in dissertation

Important Note: Plagiarism Regulations

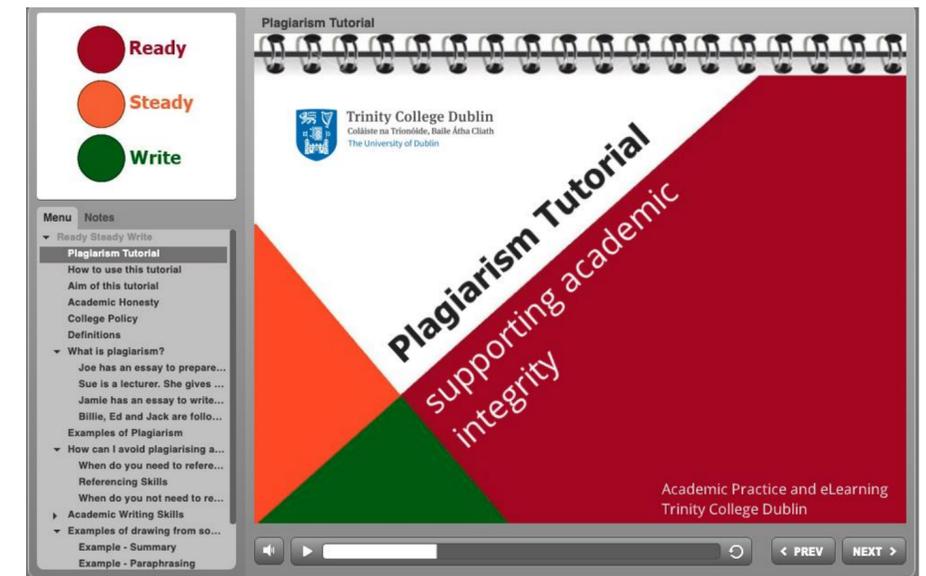
Presenting the work or ideas of others as one's own, without due acknowledgement

Extremely important, particularly at PG level.

One of the most common reasons to fail.

Students must read regulations

- Details: <https://libguides.tcd.ie/plagiarism>
- Mandatory tutorial: <https://libguides.tcd.ie/academic-integrity/ready-steady-write>
- [Also detailed in Course Handbook]



Course Facilities



Lloyd Building
 (Lecture Theatres LB.01, 04, 08, Seminar Rooms LB107, LB120, Staff Offices)



O'Reilly Building
 (Staff Offices, Conference Rooms, Labs LG37)



Arts 1008
 (sometimes for cs7cs4)

Trinity Central
 (Trinity Central Lab L2.01 Lab)



7-9 South Leinster Street
4th Floor
 (Main MSc Lab, Seminar Rm. 4.09, Student Meeting Rooms)



dedicated space for MSc CS.

Hamilton Building
 (Hamilton Library)



Sites listed are managed/co-managed by SCSS.

Further Computer Facilities Provided by College are listed at:
https://www.tcd.ie/itservices/students/computer_rooms.php

Main MSc Facility: South Leinster Street 4th Floor Lab

Google Map [Phoenix House]: <https://goo.gl/maps/DnrvLUNaAjnSmxkaA>

Student lab dedicated for the MSc in Computer Science

Main lab [~80 workspaces] :

- Workstations with high-performance CPUs and GPUs
- Flexible spaces for work on student owned laptops

Special equipment room

6 x Glass-panelled break-out rooms for small group learning and project work

50-seat seminar room : SLS 4.09

Student Common Room & Kitchen



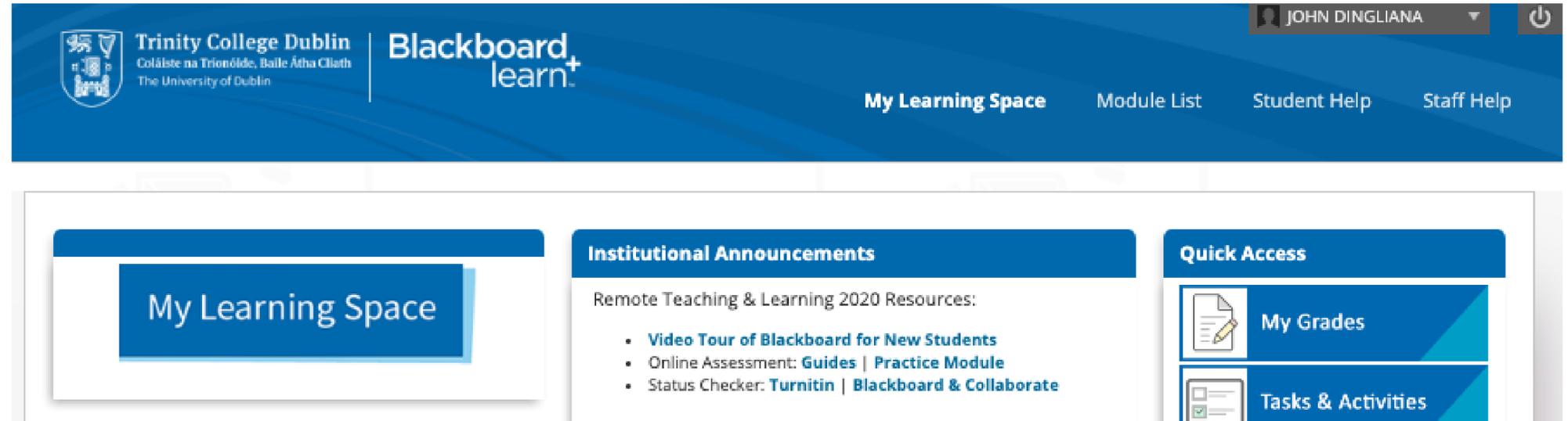
Online Course Materials and Resources: Blackboard / SITS

<http://mymodule.tcd.ie>

Course Notes

Assignment Submission

Feedback



<http://my.tcd.ie>

Time tables

Official results

Application / Registration

Administrative



Module Code	Module Name	Discipline
CS7CS4	MACHINE LEARNING	COMP- COMPUTER SYSTEMS

Timetable

The timetable shows important dates and events concerning your academic life with the institution. Dates and events from different academic weeks can be shown by selecting the relevant links.

KINDLY NOTE THAT UPDATES TO TIMETABLES FOR SEMESTER 1 2024/25 ARE ONGOING AND TIMETABLE DETAILS ARE SUBJECT TO CHANGE – PLEASE CHECK YOUR TIMETABLE REGULARLY.

Updates to module timetables completed in the University's timetabling system are interfaced to My.TCD.ie on a nightly basis.

Timetable views are defaulted to show semester 1 details only.

Semester 1 teaching weeks: weeks 3-8, 10-14 (for PG and UG continuing students) and weeks 5-8, 10-14 (for JF new entrants). Study

Global Relations [International students] : <https://www.tcd.ie/globalrelations/>

Global Officer for SCSS: Catherine McDonald

Student Counselling : https://www.tcd.ie/Student_Counselling/

Postgraduate Advisory Services (academic, pastoral and professional support):

<https://www.tcd.ie/seniortutor/students/postgraduate/>

Careers Office : <https://www.tcd.ie/Careers/>

General Administration (registration, fees, graduation, etc.) : academic.registry@tcd.ie

Information Systems Services (General computing facilities for all college) : <http://isservices.tcd.ie/>

TCD Students Union: <https://www.tcdsu.org/>

What you should do next

- Ensure you are registered, if not already
- Check that you can access blackboard mymodule.tcd.ie
- Check that you can see your modules in your timetable and blackboard (in particular check your elective modules)
 - Contact teaching-unit@rt.scss.tcd.ie asap if you cannot see your elective modules or did not get the module selection form
 - If there are modules not linked to your timetable yet, you can look-up for specific module timetables on my.tcd.ie
- Complete the Plagiarism Online Tutorial
- Look at <https://projects.scss.tcd.ie> and try to pick a topic/supervisor

Pick a class rep early (volunteer for rep if interested).

See: next slide

Make sure you know who your strand leader is

Try to get to know your class mates

Try to pick a dissertation topic early

Please be understanding of the fact that the volume of electronic communications is very high at this time. Sometimes you may need to send a gentle reminder.

Online communications on college business [including on unofficial apps e.g. whatsapp groups] should be treated as interactions within the grounds of college, and members should abide by College's *code of conduct* and *Dignity and Respect policy*.

Trinity College Dublin Students' Union

Class Representative Elections 24/25



TRINITY COLLEGE DUBLIN
STUDENTS' UNION

[TCDSU.ORG](https://www.tcdsu.org) [TCDSU](https://www.facebook.com/TCD SU) [@TCDSU](https://www.instagram.com/TCD SU) [TCDSU](https://www.youtube.com/TCD SU)

Run for Class Representative

**What is a Class Rep?
Why should I run?
How do I nominate myself?**

**Scan the QR
Code to find out!**



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Augmented and Virtual Reality Strand

Theoretical and practical knowledge for design and development of the technology that underpins interactive entertainment industries, including video games new media and communication.



Strand Leader
Michael Manzke

Machine Learning	Real-time Rendering	Dissertation
Research Methods and Innovation	Real-time Animation	
Advanced Software Engineering [10 ECTS]		
Computer Vision	Augmented Reality	
Computer Graphics*	Option 1	
Mathematics of Light and Sound	Option 2	
SEMESTER 1	SEMESTER 2	SUMMER RESEARCH PERIOD

*Students who have previously taken this module (or equivalent) MAY opt for another elective module instead

Data Science Strand

Combines statistics, cloud and security technologies with data management and analysis to equip students with skills to tackle the challenges and opportunities of the big-data revolution.



Strand Leader
Mimi Zhang

Machine Learning	Optimization Algorithms for Data Analysis	Dissertation
Research Methods and Innovation	Applied Statistical Modelling	
Data Analytics [10 ECTS]		
Data Visualization	Security and Privacy	
Scalable Computing	Option 2	
Option 1	Option 3	

SEMESTER 1

SEMESTER 2

SUMMER RESEARCH PERIOD

Future Networked Systems Strand

Smart and connected as software systems increasingly embedded in our everyday environments. Large-scale, cyber-physical and distributed systems require novel approaches that address timeliness, safety, privacy and scale challenges.



Strand Leader
Vinny Cahill

Machine Learning	Internet of Things Algorithms for Data Analysis	Dissertation
Research Methods and Innovation	Distributed Systems Modelling	
Advanced Software Engineering [10 ECTS]		
Scalable Computing	Security and Privacy	
Urban Computing	Option 2	
Next Generation Networks or Option 1	Option 3	

SEMESTER 1

SEMESTER 2

SUMMER RESEARCH PERIOD

*Next Generation Networks is strongly recommended but students who have previously taken an equivalent module MAY opt for another elective module instead

Intelligent Systems Strand

Smart and connected as software systems increasingly embedded in our everyday environments. Large-scale, cyber-physical and distributed systems require novel approaches that address timeliness, safety, privacy and scale challenges.



Strand Leader
Gaye Stevens

Machine Learning	Text Analytics Algorithms for Data Analysis	Dissertation
Research Methods and Innovation	Information Retrieval & Web Search	
Advanced Software Engineering [10 ECTS]		
Knowledge and Data Engineering	Artificial Intelligence	
Adaptive Applications	Option 2	
Option 1	Option 3	

SEMESTER 1

SEMESTER 2

SUMMER RESEARCH PERIOD

First classes*

FNS (option):

CS7NS4 Urban Computing @ 9:00am Monday - Lloyd1.07

IS:

CS7IS1 Knowledge and Data Engineering @ 1pm Monday Lloyd 1.07

FNS (option):

CS7NS3 Next Generation Networks @ 2pm - Lloyd LB.04

IS/FNS/AVR:

CS7CS3 Advanced Software Engineering @ 3pm - Lloyd LB.04

DS:

CS7DS1 Data Analytics @ 5pm - Lloyd LB.08

*according to the system today but Time tables can sometimes change, please check online if you can

What's Next

12:00 noon : General SCSS Orientation
in Joly Theatre, Hamilton Building
(Head of School + Director for Teaching and Learning Postgraduate)

2:00pm : Lunch Reception
in Foyer of O'Reilly Building

In case you want to check out your lab in the mean time...
Google Map [Phoenix House]: <https://goo.gl/maps/DnrvLUNaAjnSmxkaA>

Questions?

