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

E3 Agent Manual

E3, Engineering, Environment & Emerging Technologies

(Academic Year 2025/26)

🌐 **www.tcd.ie/e3**   👤 **e3.team@tcd.ie**

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Please note this agent manual is to provide a guide on admissions and programme information for education agents for September 2025/26 entry. The document will be updated periodically. **All information is accurate in October 2024 but subject to change at any time.**

About Trinity College Dublin

Trinity, is one of the world's leading universities, ranked 81 worldwide (QS 2024) and the number 1 university in Ireland. Founded in 1592, Trinity has a unique 428-year-old history. With 3 faculties and 24 academic schools, Trinity offers an exceptional research-led educational experience with courses in disciplines ranging from all sorts of engineering and biology and biomedical science specialisations to law and literature.

Trinity's bustling 47-acre campus is an oasis in the very heart of Dublin, a vibrant and safe European capital city. The university's city-centre location offers students a unique opportunity to blend a rigorous academic programme with an unparalleled array of cultural, social and professional experiences. A wealth of museums, theatres, galleries, cafes, restaurants and historic tourist sites are located right on Trinity's doorstep.

Trinity's enviable location positions the university right in the heart of the hub of global business activity – Europe's Silicon Valley – where students are recruited for internships, summer jobs and graduate careers from employers who look to Trinity as a key provider of top quality graduates. Upon successful completion of an undergraduate or postgraduate programme at Trinity, students have the opportunity to stay in Ireland to work for one or two years on the Third Level Graduate Scheme visa (for undergraduate and postgraduate graduates respectively).

The European headquarters of companies such as Google, eBay, AirBnB, Microsoft, PayPal, LinkedIn and Facebook, Dublin is an ideal place for students and graduates interested in working in these world-leading corporations. Innovation and Entrepreneurship are at the heart of the Trinity learning experience. Trinity has produced more entrepreneurs than any other university in Europe for 7 years in a row (Pitchbook Universities Report 2021) and 94% of Trinity graduates are in employment or further studies within 6 months after completing their studies.

The university brings together a diverse, curious and supportive community of students and faculty in the heart of the city. The truly accessible and dedicated professors encourage students to actively engage in College life and the city beyond the campus gates. Student life at Trinity is about much more than education: with over 200 sports clubs and societies ranging from athletics to tennis, debating to investing, and drama to science fiction, there is something to suit every interest. For further information, check out the website here!

Information about E3 – Engineering, Environment & Emerging Technology

E3, which stands for Engineering, Environment and Emerging Technology, is a new type of collaboration between the Schools of Engineering, Natural Sciences, and Computer Science & Statistics at Trinity College Dublin. The philosophy behind E3 is that it's possible to have a vibrant economy while at the same time supporting the natural world and the people, societies, and cultures it sustains. The Initiative addresses global challenges and enhances the wellbeing of our planet by approaching STEM education through an interdisciplinary lens.

E3 will position Ireland at the forefront of fields of research in Science, Technology, Engineering, and Mathematics (the STEM disciplines), that are crucial for future economic competitiveness. It will educate engineers and scientists for employment in existing and new technology sectors, equip them with the skills and attributes to lead in the creation of new businesses, and place Ireland in a leadership role globally for the quality of graduates in the STEM disciplines.

The Martin Naughton E3 Learning Foundry is currently being built on the university's existing historic campus. This 7,300m^2 buildings will enable the university to teach in new ways which encourage teamwork, design, and project-based activities. The Martin Naughton E3 Learning Foundry will expand education and research activities across the Schools of Engineering, Natural Sciences, and Computer Science & Statistics.

We offer a wide range of undergraduate and postgraduate programmes across the Schools of Engineering, Natural Sciences, and Computer Science & Statistics. A full list of these courses can be found overleaf, followed by detailed descriptors of schools and courses.

List of E3 Undergraduate programmes

School of Computer Science & Statistics

- Computer Science
- Computer Science Joint Honours with one of the following subjects:
    - Geography
    - Business
    - Linguistics
    - Economics
- Computer Science, Linguistics, and a Language
- Management Science and Information Systems Studies

School of Engineering

- Engineering (Common entry, with specialisms below offered from Year 3 onwards)
    - Biomedical Engineering
    - Civil, Structural & Environmental Engineering
    - Computer Engineering
    - Electronic & Computer Engineering
    - Electronic Engineering
    - Mechanical & Manufacturing Engineering
- Engineering with Management

School of Natural Science

- Biological and Biomedical Sciences
    - Common entry, with eleven specialisations/moderatorships from Year 3 onwards including: Botany; Environmental Science; Zoology.
- Geography and Geoscience (with specialisations in Geography or Geoscience)

New Multidisciplinary E3 Undergraduate programme

- Environmental Science and Engineering

For more information on E3 programmes , please visit: www.tcd.ie/e3

List of E3 Postgraduate programmes

The School of Computer Science & Statistics

- MSc Computer Science with streams in
    - Augmented & Virtual Reality
    - Data Science
    - Intelligent Systems
    - Future Networked Systems
- MSc Interactive Digital Media

The School of Engineering

- MSc in Mechanical Engineering (with a strand in Zero Carbon Technology)
- MSc in Biomedical Engineering
- MSc in Engineering, with streams in
    - Environmental Engineering
    - Structural and Geotechnical Engineering
    - Transport Engineering
    - Sustainable Energy Engineering
- MSc in Electronic Information Engineering (with a strand in Computational Engineering)
- MPhil in Music & Media Technologies

The School of Natural Sciences

- MSc Environmental Sciences
- MSc Biodiversity & Conservation
- Masters in Development Practices
- MSc in Energy Science

New Multidisciplinary E3 Postgraduate programmes

- MSc in Smart & Sustainable Cities
- MSc in Statistics & Sustainability
- MSc in Climate Adaptation Engineering

For more information on E3 programmes , please visit: www.tcd.ie/e3

Admissions at Undergraduate Level:

Admission requirements for Non-EU applicants at undergraduate level:

Direct Admissions Guide:
https://www.tcd.ie/study/assets/PDF/AdmissionGuideUGNonEUFinal.pdf

Please refer to our direct admissions guide on admission requirements for non-EU applicants. This guide has included information on minimum academic requirements, subject specific requirements for each programme and the minimum English language proficiency requirements.

Age requirement:
Applicants seeking admission in 2025 must have a date of birth before 15th January 2009

Making an application as a Non-EU Applicant:
https://www.tcd.ie/study/apply/making-an-application/undergraduate/index.php
Applicants from non-EU/EEA countries would normally be defined as non-EU applicants and apply directly to Trinity via the my.tcd.ie portal. Applicant's fee status is based on residency rather than nationality. All the guidance here relates to non-EU applicants:

Note 1: Students apply for a single course in their application. Students can submit applications up to 3 applications to Trinity. The order in which the applications are submitted is taken as the student's order of preference. They will be processed in that order and if eligible, will be made an offer for their highest preference course.
Note 2: For reference, there is a separate application system for EU fee-status applicants with central application to all Irish universities (CAO system), further detail can be found online.

Step by step guide on making an application:
1. Go to the Courses website and find the course interested.
2. Read the user guide for non-EU applicants.
3. Apply by selecting the 'Non-EU Application' link under the course description.

Application fee:
An application fee of €55 is applicable for all direct applications to Trinity College Dublin. This payment must be made online following the instructions on the application form. The online application processing fee is non-refundable. The course application will not be submitted to Trinity until the application fee is paid in full.

Supporting documents required:
As part of the online application, applicants will also need to submit original or certified true copies of:
- Final second level qualification results
- IELTS, Cambridge Advanced/Proficiency, TOEFL scores, for applicants whose first language is not English
- Academic transcripts for each year of third level study and all third level qualifications awarded
- SAT, AP or ACT scores (US and Canadian applicants only)
- Two letters of recommendation
- Passport
- Application fee (non-refundable) and application fee payment form
- Agent Authorisation form (where appropriate)

Application Closing Date:
30 June for rolling decisions. *

*Note: programmes extremely high in-demand may close earlier. Application for Undergraduate Computer Science closed in April 2024 for September 2024 entry.

Admissions at Postgraduate Level:

General Trinity Postgraduate Admission requirements (academic and English proficiency requirements): **https://www.tcd.ie/study/apply/admission-requirements/postgraduate/**

Please visit the programme page below on programme specific entry requirements and additional assessments.

Making an application:

Applicants from non-EU/EEA countries would normally be defined as non-EU applicants and apply directly to Trinity via the my.tcd.ie portal. Applicant's fee status is based on residency rather than nationality. Students apply for a single course in an application. Students can submit up to 3 applications to Trinity. These are each reviewed individually by each course director and students can be made separate offers for each application.

Step by step guide on making an application:

1. Go to the Courses website and find the course interested.
2. Read the User Guide for my.tcd.ie applications.
3. Apply by selecting the 'Apply' link under the course description.

Application fee:
An application fee of €55 is applicable for each direct applications to Trinity College Dublin. This payment must be made online following the instructions on the application form. The online application processing fee is non-refundable. The course application will not be submitted to Trinity until the application fee is paid in full.

Supporting documents required:
As part of the online application, applicants will also need to submit original or certified
true copiesof:

- Third level (university or college level) qualification;
- Evidence of English language proficiency, for applicants whose first language is not English;
- Academic transcripts for each year of third level study and all third level qualifications awarded;
- Two academic referees or one academic and one professional referee;
- CV;
- Application fee (non-refundable);
- Agent Authorisation form (where appropriate)

Application Closing Date:
Please visit the relevant programme page below on application closing date

School of Computer Science and Statistics

The School of Computer Science and Statistics is the No 1 ranked School of Computer Science on the Island of Ireland, one of the leading Schools in Europe and ranked 91st in the World 2023 (QS World University Rankings).

The rich foundations of the School began in 1969 with the creation of the first Department of Computer Science in Ireland.

Academic staff in the School of Computer Science and Statistics are split into disciplines defined broadly according to teaching and research interests. These include Artificial Intelligence, Graphics and Vision, Networks and Distributed Systems, Software and Systems, and Statistics and Information Systems.

The School is host to two SFI National Research Centres: ADAPT and CONNECT and to the Enterprise Ireland/IDA Learnovate Centre.

SCSS has a strong track record of working with industry as research partners and industry engagement through the student internship programme and software engineering projects. SCSS foster innovations through many successful start-up companies which include Iona, Havak, etc.

Dublin is an international ICT hub with nine of the world's top 10 ICT companies are located close to Trinity including Google, Facebook, Intel, Amazon, X, and LinkedIn. Graduates from the School of Computer Science and Statistics are highly sought after, and demand is continuing to grow.

Useful links:

School Page:

https://www.tcd.ie/scss

Industry Internship:

https://www.tcd.ie/scss/industry/undergraduate-internships/

Outbound Study Abroad & Exchange Opportunities:

https://www.tcd.ie/scss/study-abroad/outbound-students/

Module Directory: https://teaching.scss.tcd.ie/general-information/scss-modules/

Undergraduate Programmes

Programme name	Computer Science (BA (Mod)/MCS)
Unique Features	Computer Science at Trinity is ranked number 1 in Ireland, top 25 in Europe and top 100 worldwide (QS subject rankings, 2023) An integrated degree offering an undergraduate degree and a Masters qualification (optional). - 1st, 2nd and 3rd year focus on breadth and depth of Computer Science. - 4th and 5th Year (optional) specialised at chosen area. Software Engineering (SwEng) Projects - available to Year 2 & Year 3 students, a 12-week project - helping students to get real-life industry knowledge and experience and gain access to some of the biggest global employers. - Software Engineering Projects Study Abroad option available in Year 3 Mandatory paid internship (6-8 months) - in leading tech companies in Year 4 (if choosing the 5-year cycle) - Computer Science/Computer Engineering Internship Programme) Approx. 20 contact hours per week for lectures, labs and tutorials Course and module details can be found here: https://teaching.scss.tcd.ie/integrated-computer-science/ Course handbook for 2024: https://teaching.scss.tcd.ie/wp-content/uploads/sites/10/2024/09/Integrated-Computer-Science-Handbook-24-25-V3.pdf FAQ Page: https://www.tcd.ie/scss/courses/undergraduate/computer-science/faq/
Career outcomes	Graduates find employment in almost every sector from communications and entertainment to manufacturing and transportation, government, healthcare, education and many more. Positions can be found within: design, testing, manufacturing, support and implementation, information systems, research and development, operations and management. Many graduates hold senior positions such as CTO and CIO. Internship providers include: Cisco, DemonWare, Microsoft, MasterCard, Murex, Susquehanna International Group (SIG), Accenture, Google, First Derivatives, Havok, Bloomberg, Bank of America Merrill Lynch, Glanta Ltd., SAP, Amazon, AOL, Incognito, Swrve, ALTV, Citi, EATON, Hubspot, Intel-Movidus, KDEG/CNGL TCD, LexisNexis, Popdeem, Popple, PWC, Purpledecks, Qualtrics, Revenue, Shutterstock, SQA Consulting, Ticket Chain, Toast, Touchtec Payments, Travelport Digital, Ultan Technologies, Workday
Entry Reqts	Please refer to our direct admissions guide for non-EU applicants. Subject Specific Requirement: Mathematics

Programme name	Computer Science (Joint Honours) (Joint Honours with Business/Linguistics/Geography/Economics)
Unique Features	Joint honours pathway or major with minor pathway: Year 1: 50% 50% split Year 2: 66% and 33% split or 33% each for the two areas and 33% on elective modules Year 3 & 4: 75% and 25% split for major with a minor or 50% & 50% split for a joint honour. Single honours exit options: Geography, Economics Course Handbook 2024: https://teaching.scss.tcd.ie/wp-content/uploads/sites/10/2024/09/Joint-Honours-Computer-Science-Handbook-2024_2025.pdf **Computer Science modules include:** Systems programming, algorithms and data structure, AI, machine learning, Software Engineering, Computer Networks, Computer Graphics, Computer Vision. **Course and module details can be found here:** https://teaching.scss.tcd.ie/joint-honors-computer-science/
Career outcomes	**Computer Science & Business:**
	Graduates of this programme have secured employment in a variety of roles and areas. They have been hired by multinationals, both nationally and internationally, such as Google, LinkedIn, Twitter and by consultancy and accountancy firms such as Ernst & Young, Accenture, MRBI, PwC, and KPMG.
	Computer Science & Linguistics:
	Graduates are qualified to work as language specialists, in the language and speech technology sector, as information technologists or software specialists in any of the IT, banking, publishing or multimedia sectors
	Computer Science & Geography:
	Graduates from this new course will be highly skilled and employable in both industrial and governmental organisations. Career options include urban and regional planning, environmental consultancy and research.
	Computer Science & Economics:
	Graduates of this new combination will be highly sought after by a range of employers in business, financial technology, public service, and academia. Graduates of this programme will particularly appeal to technology firms and financial institutions.
Entry Reqts	• Please refer to our direct admissions guide for non-EU applicants. • Subject Specific Requirement: Mathematics

Programme name	Management Science & Information Systems Studies (MSISS)
Unique Features	One of the best graduate employment records of any undergraduate course in Ireland MSISS focuses on four areas: **Quantitative Methods:** Subjects include mathematics, statistics, probability, data analytics and management science/operations research methods. **Business and Management** Subjects covered include economics, management, finance and accounting. **Information Technology and Systems** Fundamentals of programming, spreadsheets, database, information systems **Interpersonal Skills** Presentations, interviewing and teamwork. MSISS Projects – Final year student takes on a real project for a real client, with the goal to find real solutions. Clients include: AIB, Procter and Gamble, ESB, Irish Life, the GAA, Bank of Ireland, Google, Boylesports, O2 Telefonica, Accenture, PA Consulting, L&P Group Course and module details can be found here: https://teaching.scss.tcd.ie/management-science-and-information-systems-studies/ Course Handbook 2024: https://teaching.scss.tcd.ie/wp-content/uploads/sites/10/2024/09/MSISS-Handbook-24-25.pdf
Career outcomes	Remarkably wide range of careers within management consultancy, the financial services and several of the professions. Employers include: Deloitte, Ernst and Young, Accenture, McKinsey, KPMG, PwC, BearingPoint, PA Consulting, Distinct Business Consulting, Bank of America Merill Lynch, CitiBank, CreditSuisse, Barclays, Deutsche Bank, JP Morgan, HSBC, RBS, Bank of Ireland, Ulster Bank, Irish Life, Aviva, Mercer, Paddy Power, First Derivatives, Boylesports, Kerry Group, Google, Colgate-Palmolive, Proctor and Gamble and United Drug.
Entry Reqts	• Please refer to our direct admissions guide for non-EU applicants. • Subject Specific Requirement: Mathematics

Programme name	Computer Science, Linguistics, and a Language (Spanish/French/Irish)
Unique Features	Roughly 50% computer science, 25% study of the language of choice, and 25% linguistics (smae ratio across each of the 4 years). Third year study abroad in European universities as Erasmus Exchange is compulsory. This is one of the most integrated, interdisciplinary degrees on offer in the school, bridging computer science, linguistic sciences, and the arts. Only programme of its kind in Ireland, and unique internationally as an undergraduate degree offering. The teaching is research led: many lecturers are themselves involved in research and the development of speech and language technology. Students get to see and, at times, participate in this research, and graduates are highly sought after as researchers. The interdisciplinary skills acquired open doors to world mobility and employability. **Computer science component:** - Programming languages (Java, C++), data structure and algorithms, software engineering and databases, AI, Machine Learning and Computational Linguistics **Linguistics component:** - Syntax, Semantics, Pragmatics, Phonetics, Phonology and Speech Science **Language component:** - To build competency in French, Spanish or Irish for 3rd year study abroad and for future career CSLL undergraduates also attend research seminar, The Dublin Computational Linguistics Research Seminar (DCLRS), in which linguistic and computational linguistic research is presented. Course and module details can be found here: https://teaching.scss.tcd.ie/computer-science-linguistics-and-a-language/ Course Handbook 2024: https://teaching.scss.tcd.ie/wp-content/uploads/sites/10/2024/09/CSLL-2024_2025-1.pdf
Career outcomes	Areas of which CSLL graduates have gone into (in Ireland and abroad): - the language technology industry (eg. IBM, Microsoft) - general software engineering in Ireland and abroad (eg. Google, Accenture) - technological and organisation roles within IT or other sections of multinationals (BMW, Ingersoll Rand) - direct use of language skills in translation consultancy (eg. Transpiral), in the Irish Diplomatic Corps and the European Patent Office - Banking and finance (e.g. Deutsche Bank, DEPFA) - speech and language therapy - further post-graduate study
Entry Reqts	• Please refer to our direct admissions guide for non-EU applicants. • Subject Specific Requirement: Mathematics and the chosen language (e.g. Spanish/French/Irish)

Programme name	MSc in Computer Science - **Data Science (40 places)** - **Intelligent Systems (30 places)** - **Future Networked Systems (30 places)** - **Augmented & Virtual Reality (30 places)**
	Data Science: https://teaching.scss.tcd.ie/m-sc-computer-science-data-science/
Strand Features & Career Outcomes	Students will learn 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 (data visualisation) Positions held: Data Engineer, Data Architect, Data Analyst, Cloud Engineer Analytics, Fraud Investigator, Software Engineer, Software Developer, Business Integrity Analyst, R&D Engineer, Data Scientist, Data Visualisation Analyst Employers: Accenture, AIB, Amazon, Bank of America Merill Lynch, Bank of Ireland, ByteDance, Deloitte, Meta (Facebook), General Motor, Huawei, HP, IBM, Microsoft, Optum, SAP, Workday, Vodafone
	Intelligent Systems: https://teaching.scss.tcd.ie/m-sc-computer-science-intelligent-systems/
Strand Features & Career Outcomes	IS strand will provide graduates with the ability to specialise in intelligent adaptive systems and artificial intelligence. This strand is closely linked to the school's research groups involved in the ADAPT (SFI research centre on AI-Driven Digital Content Technology). Positions held: Research Engineer, AI/ML Research Engineer, Head of AI, Software Development, Net Developer, R&D Software Engineer, Deep Learning Engineer, Solution Engineer, AI/ML Scientist, Machine Learning Engineer, Data Analyst Employers: Accenture, Agilis AS, Apple, Aspire, Bank of America, Beautifeye, China Mobile, Datadog, Deloitte, Ericsson, Fidelity Investments, Gaming Innovation Group, General Motors, IBM, Intel, Learnovate, Optum, VHI
	Future Networked Systems: https://teaching.scss.tcd.ie/m-sc-computer-science-future-networked-systems/
Strand Features & Career Outcomes	This strand focuses on how things become smart and connected as software systems. Two to three option modules to be selected from other MSc strands, allow students to tailor to your area of interest. This strand builds on research activity within the CONNECT research centre (SFI research centre for Future Networks and Communications) Positions held: Solutions Architect, Quality Engineer, Software Engineer, QA Engineer, C++ Developer, Data Engineer, Product Technical Programme Manager, Big Data Cloud Engineer, Senior Software Engineering (R&D), AI Software Engineer, Software Developer, Technology Analyst Employers include: MongoDB, Telnyx, Fidelity Investments, Pico, Amazon, Facebook/Meta, Bytedance, Oracle, Microsoft, DXC Technology, Genesys, Jaguar Land Rover, Citi, DMF Systems, Labs CRT (ML-LABS)
	Augment & Virtual Reality: https://teaching.scss.tcd.ie/m-sc-computer-science-augmented-and-virtual-reality/
Strand Features & Career Outcomes	This strand focuses on the design and development of the technology that underpins video game market as well as the wider industries of interactive entertainment, new media and communication. The strand builds on research expertise in the Trinity Centre for Creative Technologies.

Positions held: Senior Software Engineer, Full-Stack Developer, Graphic Engineer, FX Pipeline Technical Director, Consultant C++ Engineer, Algorithm Engineer, Senior Software Engineering, AI/Graphics Engineer, Virtual Reality Software Engineer, Senior Automation Engineer, 3D Computer Vision Engineer, Game Developer Employers: NVIDIA, AMD, Imagination Technologies, Boulder Media, Barco, Huawei, CashAnalytics, Logitech, Viga Entertainment Technology, TopBox Studios, Model Works, Munich Reautomation Solutions, Volograms, TiMi Studios MSc in Computer Science Course Handbook 2024: MSc-Computer-Science-Handbook-2024-25.pdf				
Entry reqts and additional assessments	- Closing on 31st January (Data Science) - Closing on 31st July (Intelligent Systems/Future Networked Systems/AVR) • Upper second-class honours (2.1) or higher in Computer Science or related discipline. • Open to candidates from Engineering, Mathematics, Statistics & Physics • Competency in programming (C, C++ or java) • **English is compulsory for Data Science and Intelligent System before application can progress further** Additional Assessments: Shortlisted candidates will be invited for programming test in a language of applicant's choice – Java, C or C++ Programming tests focus on a developer's ability to create solutions, implement new functionality, analyse code, or fix a bug.				

Overview of modules offered in the MSc in Computer Science (**Note: C = CORE, E= Elective**)

Modules	Data Science	Intelligent systems	Future Networked Systems	Augmented Virtual Reality
CS7CS4 – Machine Learning	CORE	CORE	CORE	CORE
CS7CS6 – Research and Innovation	CORE	CORE	CORE	CORE
CS7CS5 – Dissertation	CORE	CORE	CORE	CORE
CS7CS3 – Advanced Software Engineering	E	CORE	CORE	CORE
CS7DS1 – Data Analytics	CORE	CORE	E	
CS7DS2 – Optimisation Algorithms for Data Analysis	CORE	E	E	E
CS7DS3 – Applied Statistical Modelling	CORE	E	E	E
CS7DS4 – Data Visualisation	CORE	E	E	
CS7NS1 – Scalable Computing	CORE	E	CORE	
CS7NS2 – Internet of Things	E	E	CORE	E
CS7NS3 – Next Generation Networks	E	E	E	
CS7NS4 – Urban Computing	E	E	CORE	
CS7NS5 – Security and Privacy	CORE	E	CORE	E
CS7NS6 – Distributed Systems	E	E	CORE	E
CS7IS1 – Knowledge and Data Engineering	E	CORE	E	
CS7IS2 – Artificial Intelligence	E	CORE	E	E
CS7IS3 – Information Retrieval and Web Search	E	CORE	E	
CS7IS4 – Text Analytics	E	CORE	E	E
CS7IS5 – Adaptive Applications	E	CORE	E	E
CS7GV1 – Computer Vision	E	E	E	CORE
CS7GV2 – Mathematics of Light and Sound	E	E	E	CORE
CS7GV3 – Real-Time Rendering	E	E	E	CORE
CS7GV4 – Augmented Reality	E	E	E	CORE
CS7GV5 – Real-Time Animation	E	E	E	CORE
CS7GV6 – Computer Graphics	E	E	E	CORE

Programme name	MSc in Interactive Digital Media (30 places)
Unique Features	Well-established programme, running since 1996, formerly called the MSc in Multimedia Systems Students come from a diverse range of academic backgrounds (Technology, Science, Social Science and Engineering and Arts). This programme teaches the programming languages and applications used in digital media and also includes modules on interactive design, game design, narrative, and usability design. Annual Showcase - Student projects are showcased every year, event is open to public. Core modules: Programming for Digital Media/Authoring for Digital Media/Contextual Media/Audio, Video & Sensor Technologies/Image Processing and 3D Modelling More details can be found here: https://www.tcd.ie/scss/courses/postgraduate/interactive-digital-media/ Course Handbook 2024: https://teaching.scss.tcd.ie/wp-content/uploads/sites/10/2024/09/MSc-IDM-Course-Handbook-2024-2025.pdf
Career outcomes	Positions held: App Designer and Developer, Web Designer and Developer, Software Developer, Graphic and Visual Designer, UI and UX Designer, Interaction Designer, Game Designer, Product Designer, Technology Journalist, Project Manager, Security and Data Analyst, Digital Analyst, Corporate Communicate Lead, CEO/CIO (Chief Innovation Officer), Research Fellow Companies: BBC, AIB, Facebook, Microsoft, Transics, Google, Intercom, Shutterstock Bank of Ireland, IBM, Walmart Global Tech, FieldAware, Accenture, Hubspot, Innopharma, Deloitte, Salesforce, L'oreal
Entry reqts and additional assessment	Application closing on 31st July. **Applicant must include English proficiency cert (if required) and portfolio before full assessment**. Upper second-class honours (2.1) or higher in any discipline. Desired ability: Literary, artistic, and creative ability, this must be **evidenced by portfolio submission**. Additional Assessments: Shortlisted candidates will be invited for an interview

Programme name	MSc in Statistics & Sustainability (E3 Programme) (25 places)	
Unique Features	Second multi-disciplinary masters being delivered as part of Trinity's new E3 initiative. Graduates will be equipped with the quantitative skills needed to promote data-based decision making and 'green' innovation. The programme provides students with a wide range of modelling, computing, and statistical skills, and they will study a variety of sustainability topics that are key to developing solutions to environmental challenges Core modules include: Foundations of Statistics/Advanced Linear Models 1 & 2/GIS/GIS, etc Optional modules include: **Statistics** – Time Series/Applied Statistical Modelling/Data Analytics, etc **Sustainability** – Air Pollution, Transportation Modelling & Planning/Energy Policy and Building Energy Demand/Environment Policy/Advanced Spatial Analysis using GIS More details on the course and modules can be found here: https://teaching.scss.tcd.ie/statistics-and-sustainability-m-sc/	
Career outcomes	Globally, statistical and data skills are in demand from industry and government organisations. The first cohort started in Sept 2023. Potential employers include companies in the Technology, Telecoms and Audio-visual sector, Financial Services, Leasing and Professional Services, Construction, Property and Engineering, Energy, Transport and Resources, Food and Drink, small businesses, and government sectors.	
Entry reqts and additional assessment	Application closing on 31st July. Upper second-class honours (2.1) degree or higher Strong background in numeracy that includes at least one year of university-level mathematics including linear algebra, calculus and statistics topics.	

School of Engineering

The School of Engineering at Trinity has been teaching Engineering since 1841. There have been immense developments since that time, but the continuity of excellence in teaching and learning is a source of pride for the School and its graduates.

The School of Engineering is a vibrant, intellectual community of innovative researchers, teachers and students, which combines high-quality teaching with expansive research activity. Each year, the Engineering School welcomes growing numbers of visiting and full-time students from around the world who enrich our shared multicultural learning environment. The School has international students from all over Europe, North and South America, Australia, Asia and Africa. The School strives to educate global citizens who will have a real impact on society and who will enhance engineering throughout the world, by sharing their innovative ideas.

The School of Engineering at Trinity is ranked number one in Ireland and is in the top 200 Engineering Schools in the world (QS World University Rankings by Subject 2023: Engineering & Technology). Trinity's School of Engineering offers outstanding teaching by engineers who are at the forefront of their field worldwide. It has a strong philosophy of research-led teaching and continuously benchmarks itself against the top international engineering schools.

School Facilities

Department of Civil, Structural and Environmental Engineering

Department of Mechanical, Manufacturing and Biomedical Engineering

- Mechanical Workshop
- Trinity Centre for Biomedical Engineering

Department of Electrical and Electronic Engineering

Undergraduate Programmes

Programme name	Engineering (BAI/MAI)
Unique Features	Common Entry - all students enter the Engineering programme to study 2 years of general Engineering and specialize into their preferred area as they progress into 3rd year: - Biomedical engineering - Civil, structural, and environmental engineering - Computer engineering - Electronic engineering - Electronic and computer engineering (joint programme) - Mechanical and manufacturing engineering Internship, study abroad (1 or 2 semesters) available in 4th year if students opt in for the 5-year option. Individual Capstone project in year 4 (BAI) or year 5 (MAI). Accredited by Engineers' Ireland, which is a member of the European Network for Accreditation of Engineering Education (ENAEE) and the Washington Accord and thus internationally recognised by signature countries, including China (CAST), India (NBA), UK and the USA (ABET). Students require a master's degree to be directly eligible for Chartered Engineer status with Engineers Ireland. Course is delivered through lectures, labs, tutorials. Study Abroad and Internship Opportunities Dual Engineering Masters Pathway Programme available with Columbia University. Student testimonial video Course structure, modules, assessment information available here.
Career outcomes	Companies where our Engineering alumni work include: Biomedical Engineering Teknosurgical, BD, Beaumont Hospital, Jacobs, Johnson & Johnson, Mallinckrodt Pharmaceuticals, Medtromic Mechanical and Manufacturing Engineering Amazon, Stryker, AWN Consulting, Deloitte, Design Partners, Dresio Limited, Dublin Offshore, EDC Engineers, Intel, Jones Engineering, Kent Tainless, Mallinckrodt, Pharmaceuticals, Praesto, SIEMENS, World Generations Limited, Jones Robinson Civil, Structural and Environmental Engineering AECOM, Arup, ESB International, Hegarty Demolition, BAM Ireland, Lioncor Developments DBFL Consulting Engineering Computer, Electronic, Computer and Electronic Engineering KMPG, Bloomberg, Google, Intel, Mastercard, Toast, Tote, BluBridge Technologies, Coca Cola, CyberLens, Vecna Robotics, Vodafone
Entry Reqts	Please refer to our direct admissions guide for non-EU applicants. Subject Specific Requirement: Mathematics

Programme name	Engineering with Management (BAI/MAI)
Unique Features	Course is structured around themes that are developed over the four years: • Engineering Fundamentals • Business and Management • Design • Manufacturing Engineering From year three, students can select from one of the following themes: • Energy • Bioengineering/ Manufacturing • Mechanical/ • Manufacturing Small class size (25-30 students). 80% of the syllabus comprises engineering subjects and 20% comprises management subjects. Innovation in Product Development module: pairs TCD students in teams with students from world's leading institutions (e.g. Stanford) working with industry sponsors; Trip to partner university and also to Stanford and Silicon Valley area. Internship, study abroad (1 or 2 semesters) available in 4th year if students opt in for the 5-year option. Individual Capstone project in year 4 (BAI) or year 5 (MAI). Accredited by Engineers' Ireland, which is a member of the European Network for Accreditation of Engineering Education (ENAEE) and the Washington Accord and thus internationally recognised by signature countries, including China (CAST), India (NBA), UK and the USA (ABET). Students require a master's degree to be eligible to apply for Chartered Engineer status with Engineers Ireland. Course is delivered through lectures, labs, tutorials. Study Abroad and Internship Opportunities Dual Engineering Masters Pathway Programme available with Columbia University. Course structure, modules, assessment information available here.
Career outcomes	Companies where our alumni work include: Datadog, Deloitte, Intel, Microsoft, Whippy
Entry Reqts	Please refer to our direct admissions guide for non-EU applicants. Subject Specific Requirement: Mathematics

Programme name	Environmental Science and Engineering (BAI/MAI/BSc/MSc)
Unique Features	Aims to train the next generation of graduates who have the competencies, knowledge, and experience to design and deploy solutions that protect and improve our environment and human wellbeing. Following the completion of the first three years of the course, student start to follow a more specialised programme in one of the following strands, although there are still many shared courses and projects: • Environmental Engineering • Applied Environmental Science Students complete an integrated five-year course consisting of four-year BSc plus and additional year of study leading to either Masters in Engineering (Studies) or Masters in Applied Environmental Science. Delivered through the expertise of two schools: School of Engineering and School of Natural Science. Course is delivered through lectures, labs, tutorials, and field work. Internship, study abroad (1 or 2 semesters) available in 4th year if students opt in for the 5-year option. Individual Capstone project in year 4 (BAI) or year 5 (MAI). Course structure, modules, assessment information available here.
Career outcomes	Graduates will be highly skilled and employable in both industrial and governmental organisations. Graduates will have a strong grounding in Environmental Science in conjunction with applied Engineering skills and will therefore be at the forefront of initiatives to solve the challenges of many of the United National Sustainability Development Goals. Companies and area of work would include: • R&D • Civil Engineering and Environmental Consultancies • Environmental Regulation Energy companies • Mining companies • Design and development of environmental solutions in leading companies such as Arup, RPS, ESB International, Shell, IBM • Local Authorities • Environmental Protection Agency • Geological Survey Ireland Humanitarian Non-Governmental Organisations (Concern, GOAL, Selfhelp Africa)
Entry Reqts	Please refer to our direct admissions guide for non-EU applicants. Subject Specific Requirement: Mathematics

Postgraduate Taught Programmes

Programme name	MSc in Mechanical Engineering/Zero Carbon Technology (25 places)
Unique Features	This masters addresses advanced topics over a wide range of Mechanical and Manufacturing Engineering subjects. Themed areas include advanced manufacturing, materials, fluid mechanics and automation design. Within the MSc, there is a wide range of module options and an excellent opportunity to engage in topical research with leading research groups within the School of Engineering, as an important part of this programme is a research dissertation, which directly builds on some of the content of the modules. Zero Carbon Technology strand option with a focus on technology to achieve the transformation to low-carbon energy and transport, covering power, transport and resources with related business and planning options. Zero Carbon Technology students will be expected to complete a research project with topic choices include hydrogen energy, aviation, fuel cells, transport technology, thermal energy systems, battery management, wind, and solar energy. Often these projects are linked to national or international industrial collaborators. Postgraduate Certificate and Postgraduate Diploma option available. Course is accredited by the Institute of Engineers of Ireland (EI). Course page: https://www.tcd.ie/mecheng/teaching/postgraduate/msc-in-mechanical-engineering/
Career outcomes	Companies where our alumni work include: Diageo, Mott MacDonald, Trinity College Dublin, GE Healthcare, Stryker, Watlow, JLL, Exotec, Pfizer, Mercury, Teleflex Medical OEM, Motional Engineering, Jones Engineering ITP Aero Positions our alumni hold: Project Engineer, Senior Water Engineer, Research and Teaching Assistant, Automation Process Engineer, Installation Qualification Engineer, Sustainability Engineer, Mechanical Engineer, BIM Engineer, Design Engineer
Entry Reqts and additional assessments	Application deadline: 31st July **Applicant must include English proficiency cert (if required) before full assessment**. Upper second-class honours (2.1) or higher in engineering, science, computing, statistics, mathematics, or a related discipline. Well-qualified candidates or industry professionals from other numerate disciplines who have sufficient knowledge of engineering and science, may also be considered. Additional assessments: Shortlisted applicants might be invited for an interview.

Programme name	MSc in Biomedical Engineering (20 places)
Unique Features	In 2022 this course became accredited by the Institute of Engineers of Ireland (EI). Four streams available: General/Medical Device Design/Neural Engineering/Tissue Engineering **MSc Biomedical Engineering General Stream** Topics cover from developing new materials for use in cardiac care, analysing minute electrical signals changes in the brain for neurological diagnosis to artificially growing new tissue to replace organ transplantation. **MSc Biomedical Engineering with specialisation in Medical Device Design Engineering** Designed to interact with the medical device industry, clinicians, and researchers to produce new solutions to current clinical needs. **MSc Biomedical Engineering with specialisation in Neural Engineering** The neural stream is focused on clinical neural engineering. This is based on signal processing of neuroimaging and electrophysiological data to solve specific clinical problems. MSc research projects employ neuroimaging (EEG and MRI) to develop quantitative methods to understand neurological function but also employ new analytical, neurophysiological and neuroimaging methods that allow outcomes of interventions to be more accurately predicted. **MSc Biomedical Engineering with specialisation in Tissue Engineering** This programme provides students with a critical understanding of stem cell biology and therapeutic applications, animal and human cell culture processes, and strategies at the forefront of current scientific developments to regenerate or repair damaged tissues. This exciting multidisciplinary field of research which holds significant potential in the treatment of many diseases and disorders. The stream provides 'hands-on' training in state-of-the-art and tissue engineering techniques allowing individuals to develop the necessary skills to pursue a significant research topic in the field of tissue engineering and regenerative medicine. Excellence in Education Award (2012) - recognising the scale and diversity the course delivers in terms of the student experience, its contribution to the Irish economy and making an impact on global healthcare challenges. Best Postgraduate Course of the Year in Engineering (Winner 2012, Runner up 2016). This MSc. programme is an excellent foundation for further research and many graduates are currently doing PhD research in Medical Device Design. The Trinity Centre for Biomedical Engineering has extensive clinical research in all the five teaching hospitals. It has over 20 academics from all School of Engineering, School of Medicine, Dental School, School of Natural Sciences and over 75 PhD and 28 MSc researchers. Course Handbook 2024: https://www.tcd.ie/media/tcd/biomedical-engineering/pdfs/MSc-Biomedical-Engineering-Handbook-2024-25.pdf Career Opportunities: https://www.tcd.ie/biomedicalengineering/education/msc/career/
Career outcomes	9 of the world's 10 largest medical device companies have operations in Ireland, such as Abbott, Bayer, Becton Dickinson, Boston Scientific, Johnson & Johnson, Guidant,

	Medtronic, and Stryker. The sector employs over 32,000 people in 300+ companies and generates sales in excess of 6 billion euros annually. Over half of the medical technologies companies based in Ireland have dedicated R&D facilities. Companies where our alumni work include: Becton Dickinson, Boston Scientific, Johnson & Johnson, Riche, Bristol Myers Squibb Thermo Fisher Scientific, Medtronic, Maastro, Booke Bio Ltd., CroiValve, Harvard University MIT, Trinity College Dublin Positions our alumni hold: R&D Engineer, Quality Assurance Engineer, Technology Engineer, Software Consultant, Digital Health Analyst, Systems Engineer, Manufacturing Engineer, Clinical Engineer, Researcher, Teaching Assistant, Process Development Manager
Entry Reqts and additional assessments	Application deadline: 31st March. Applicant must indicate preferred stream in the application. Upper second-class honours (2.1) or higher in engineering, biomedical technology or a cognate discipline. Additional assessments: Shortlisted applicants will be invited for an interview

Programme name	MSc in Engineering (with four specialisations - Environmental/Structural & Geotechnical/Transport/Sustainable Energy) (25 places)
Unique Features	Accredited by Engineers' Ireland, which is a member of the European Network for Accreditation of Engineering Education (ENAEE) and the Washington Accord and thus internationally recognised by signature countries, including China (CAST), India (NBA), UK and the USA (ABET)
	10% of the total cohort are part-time and from industry.
	T-shape teaching providing a breath of complementary skills and a depth of specialist knowledge and skills.
	Environmental Engineering modules include: Air Pollution, Waste Management and Energy Recovery, Water Quality and Hydrological Modelling, Water Resource Planning and Climate Change, Sustainable Water Supply and Sanitation
	Structural and Geotechnical modules include: Geotechnical Engineering, Advanced Structural Analysis, Wind and Earthquake Engineering, Bridge Engineering, Advanced Concrete Technology, Offshore Geotechnical Engineering
	Sustainable Energy modules include: Wind Energy, Solar Energy Conversion and Applications, Energy Policy and Demand, Wave and Hydro Energy
	Transport Engineering modules include: Transportation Policy, Transportation Modelling and Planning, Intelligent Transportation Systems, Transport Design
	Common modules include: Advanced Spatial Analysis using GIS.
	More details on the course and strands can be found here: https://www.tcd.ie/civileng/programmes/postgraduate/msc-in-engineering/
	Course Handbook 2024: https://www.tcd.ie/media/tcd/civil-engineering/pdf/MSc-in-Engineering-24-25-Final-version.pdf
Career outcomes	Companies where our alumni work include: CS Consulting Group, Eaton Intelligent Power, BAM Ireland, Jones Engineering, Atkins AquaQ Analytics Ltd., JB Barry and Partners, AECOM, ESB International, EirGrid Group Irish Water, BrightWind, EPA, Intel, Dublin City Council, JBA Consulting, EDF France, Board Na Mona
	Positions our alumni hold: Civil Engineer, Bridge Engineer, Site Engineer, Structural Engineer, Transportation Engineer Environmental Engineer, Environmental Consultancy, Hydrogeologists, Hydrologists, Process Engineer, Construction Engineer, Renewable Solution Engineer, Project Engineer Environmental Health Safety Engineer, Environmental Intern
Entry Reqts and additional assessments	Application deadline: 30th June
	Upper second-class honours (2.1) or higher in engineering or related degree.
	Additional assessments: Applicants may be invited for an interview.

Programme name	**MSc in Climate Adaptation Engineering (new E3 programme) (25 places)**
	New multi-disciplinary masters being delivered as part of Trinity's E3 initiative.
	The MSc in Climate Adaptation Engineering will enhance the technical capacity of graduates to effectively design and deliver balanced engineering solutions that supports climate adaptation for society, it also provides graduates the knowledge of climate and data science.
	The core engineering modules will provide a technical basis for addressing climate adaptation measures, from conceptualisation to realisation, with content from Natural Sciences providing a scientific context for how and why the climate is changing and the associated impacts, and the School of Computer Science & Statistics will be providing a means to deliver data-driven climate adaptation solutions.
	Students will undertake a significant industry-led research project based on original research or reflecting experiential learning that is presented in the form of a report.
	Core modules include: • Introduction to Climate Adaptation Engineering • Global Environmental Change • Advanced Spatial Analysis using GIS • Introduction to Machine Learning • Climate Adaptation Engineering Challenge • Adaptation Planning for Infrastructure • Civil Engineering for Sustainable Development • Life Cycle Assessment for Engineering Practice • Interactions with Biodiversity
	Optional modules include Advanced Linear Models 1, Bridge Engineering, Climate Change: Science, Development & Justice, Energy Policy & Energy Storage, Sustainable Water Supply & Sanitation, Transportation Modelling & Planning, Environmental Policy, Smart Eco-Cities of the Future, Water Resource Planning & Climate Change, Wave & Hydro Energy, Wind Energy
	More details on the course and modules can be found here: https://www.tcd.ie/courses/postgraduate/courses/climate-adaptation-engineering-msc--pgraddip/
Career outcomes	First cohort will be starting in September 2025. Graduates will have the capacity to effectively plan and deliver climate adaptation solutions across different types of projects in sectors such as the built environment, industry, transportation, energy, and infrastructure.
Entry Reqts and additional assessments	Application deadline: 30th June 2025 Admission to the course is competitive. Applicants will be expected to have an Honours Bachelor's degree at 2.1 or above, in a STEM (science, technology, engineering or mathematics), architecture, urban planning, or a related cognate discipline. Shortlisted candidate may be invited for an interview.

Programme name	MSc in Electronic Information Engineering/Computational Engineering (28 places)
Unique Features	Department of Electrical and Electronic Engineering ranked #1 in Ireland (QS 2022 Ranking) This course is designed to provide graduate engineers with skills to design modern computational products and systems. Information processing engines pervade all aspect of modern life. The principles enabling the design of this new wave of products are embodied in the discipline of Information Engineering. This course allows graduates to specialise in fundamental theory and applications relating to the generation, distribution, analysis, and use of information in engineering and science. This course consists of taught modules worth 60 credits and a project worth 30 credits. Full module details can be found here: A specialism in Computational Engineering is available for students selecting at least 15 ECTS from the Computational Engineering strand. Computational Engineering strand available with following modules: • Algorithms for Quantum Computing • Cyberphysical Systems and Control • Simulation for Geophysical Modelling • Computation for Transportation Engineering Postgraduate Certificate and Postgraduate Diploma option available. Course Director Prof. Anil Kokaram, Scientific and Technical Academy Award (Oscar) winner for his cutting-edge video and audio restoration technologies. Course specific bursaries from Huawei and Qualcomm. Guest lectures by top industry leaders (Google, YouTube, IBM, NVidia, Foundry, Alstom, Intel, Huawei, Meta, IES, Qualcomm) Course page: https://www.tcd.ie/eleceng/teaching/postgraduate/electronic-information-engineering/
Career outcomes	Companies where our alumni work include: Arup, Intel Corporation, Pilz Ireland, Micron Technology, AMD, IC Mask Design, ESB Internattional, TD Securities, SMIT, Trinity College Dublin, Sogeti, Centric Health, Movidius, Huawei Positions our alumni hold: Design Engineer, Product Support Engineer, DRAM Product Engineer, Silicon Design Engineer, Layout Engineer, Frontend Web Developer, Process Engineer, Senior Application Support Engineer, Software Engineer, Video Engineer, Researcher, Automation Engineer Quality Assurance Test Analyst, Analyst Programmer Job Prospects: Speech Recognition Designer, Video Systems Engineer, DSP Engineer, Communications Systems Engineer, Video Coding R&D, Streaming Media Engineer, Audio Production Engineer
Entry Reqts and additional assessments	Application deadline: 31st July Upper second-class honours (2.1) or higher in engineering, science, computing, statistics, mathematics or a related discipline. Additional assessments: Shortlisted applicants will be invited for a 30-minute interview.

Programme name	**MPhil in Music and Media Technologies (20 places)**
Unique Features	Provides an exposure to the principles and applications of computer, audio and video technologies in combination with significant exposure to media related topics such as music, visual music, and interactive installations. Musically, a strong emphasis is placed on the development of adaptable compositional skills, while technological topics are addressed from both a hands-on workstation/studio exposure and a fundamental mathematical and scientific basis, which focuses on musically relevant issues. Research project follows three models: 1. Hybrid project 2. Composition project 3. Dissertation Annual graduate exhibition/showcase at the end of the programme. The course website, including an overview of the course and modules, can be found here: https://www.tcd.ie/eleceng/mmt/
Career outcomes	Graduates have pursued careers in the arts as composers, musicians and performers in an extremely wide and diverse range of styles and genres, as well as careers in education and academic research; digital signal processing; software and hardware development; audio engineering; sound design for gaming, film, theatre, and virtual reality; acoustics; video editing; TV and film production; and web design.
Entry Reqts and additional assessments	Application deadline: 31st July Upper second-class honours (2.1) degree. Portfolio/evidence of creative work required as part of the application. Additional assessments: Shortlisted applicants will be invited for a 30-minute interview. Portfolio required.

School of Natural Sciences

The School of Natural Sciences conducts research, and delivers teaching, on all aspects of the natural world, from the formation of the earth, the behaviour of the environment, the evolution and ecology of its organisms and its interactions with human society.

The School is engaged with solving some of the major challenges facing human society through our teaching, research and partnership with industry and policy development both nationally and globally.

The School comprises of the Disciplines of Botany, Geography, Geology and Zoology and two research centres, accommodate ca. 40 academic staff, 25 support staff, 20 postdoctoral research fellows and over 100 graduate research students who generate annual research income in excess of €4 million and produce an average of 150 publications per year.

School Facilities

Laboratories

Museums and Gardens

Undergraduate Programmes:

Programme name	Biological and Biomedical Sciences (leading to 11 specialisations including Zoology, Botany and Environmental Science)

Unique Features	Course is delivered through lectures, seminars, laboratory-based practical classes,
	
	Core modules in year 1 and 2: cell structure and composition, genetics and evolution, molecular biology, metabolism, anatomy and physiology of bacteria, fungi, plants and animals, ecosystems, environmental biology
	
	Open modules: animal behaviour, genomes and disease, microbes and immunity, chemistry for biologist and geochemistry
	
	11 specializations after 2nd year
	
	Specializations within Natural Sciences:
	    • Zoology
	    • Botany
	    • Environmental Science
	
	Study abroad opportunity in year 3
	
	Research internship at Trinity or other universities during summer vacation
	
	Botany/Environmental Science/Zoology: field courses in Ireland, the Canary Islands, Africa (Kenya)
	
	Zoology alumnus William Campbell – Nobel Prize in Medicine (2015) for discovering a class of drugs against the disease River Blindness caused by a parasite.
	
	An overview of the Science courses:
	https://www.tcd.ie/Science/Study-Science/
	
	Details about Biological and Biomedical Science:
	https://www.tcd.ie/Science/TR060/
	1st year details: https://www.tcd.ie/Science/TR060/junior-freshman/
	2nd year details: https://www.tcd.ie/Science/TR060/senior-freshman/

Career outcomes	The course prepares for a career in science and medicine (e.g. research, biotechnology, pharmaceutical industry), areas where science education is beneficial (e.g. patent law, forensic science) and in areas as education, management, business, industry, communication, and policy making. **Botany** Career in nature reservation, environmental consultancy, agricultural research Companies include: Teagasc, the OPW, Botanic Gardens at Glasnevin, Kew, Edinburgh, Oman and Missouri, UK Carbon Capture, Storage Research Centre **Environmental Science** Conservation, waste management, resource management, environmental research, environmental protection, policy development, environmental education **Zoology** Agriculture and fisheries sector (Teagasc, BIM, Inland Fisheries Ireland), environment and wildlife services (EPA, National Parks and Wildlife Service, National Biodiversity Data

	Centre), biomedical industry and agencies (HSE), international environment and development agencies (FAO, IUCN, WBCSD)
Entry Reqts	Please refer to our direct admissions guide for non-EU applicants. Subject Specific Requirement: Mathematics and Group D Science Subjects (please refer to Trinity's Admissions Guide for Group D Science Subjects)

Programme name	Geography and Geoscience (leading to a degree in Geography or in Geoscience)
Unique Features	Course is delivered through lectures, seminars, laboratory-based practical classes, outdoor field work

Year 1 and 2: students will acquire a broad grounding in geography and geoscience with an emphasis on physical geography, geology, and human-environment interactions, learning about topical issues such as climate change, energy, natural hazards, sustainability, and natural resources

Materials include: origins and development of our planet, earth structure and composition, circulation in the atmosphere and oceans, the evolution of life on Earth, Earth surface processes and environments.

Elective modules available from Biological and Biomedical Sciences, Physical Sciences and Chemical Sciences

Year 3 and 4: specialization in either geography (geomorphology, globalisation, sustainability) or geoscience (volcanology, palaeontology, earth resources)

Study abroad (1 or 2 semesters) in year 3

An overview of the Science courses: https://www.tcd.ie/Science/Study-Science/

Details about Geography and Geoscience:

1st year details: https://www.tcd.ie/Science/TR062/junior-freshman/junior-fresh.php
2nd year details: https://www.tcd.ie/Science/TR062/senior-freshman/ |
| Career outcomes | Graduates can pursue career in academia, industry, media, research and government.

Careers leading directly from the programme include work in:
Environmental, Engineering and Geological Consultancies
Mineral exploration companies
Hydrocarbon industry
Environmental Planning
Overseas development
Government geological surveys
Teaching and research
Urban and regional planning
Political, social & financial institutions |
| Entry Reqts | Please refer to our direct admissions guide for non-EU applicants.

Subject Specific Requirement: Mathematics and Group D Science Subjects (please refer to Trinity's Admissions Guide for Group D Science Subjects) |

Postgraduate Programmes:

Programme name	MSc in Environmental Sciences (25 places)
Unique Features	A multidisciplinary programme comprising the study of the interaction between biological, chemical, and physical components of the environment. It is taught through a variety of methods including lectures, practicals, field-based learning, guided reading, discussion groups, web-based tools. Academic staff for this course have significant expertise in a diverse range of areas, such as groundwater quality, groundwater vulnerability assessment and protection, environmental change and coastal systems, biogeochemistry, environmental governance, earth systems science and geological processes, statistics, and data management. Modules include: **First semester (all 5 ECTS):** **ES7051** - Environmental Monitoring (Introduction to Energy Sciences) **ES7057** - Navigating Complexity for Sustainable Futures **BD7059** - Global Environmental Change **ES7042** - Data Handling and Analysis **ES7062** - Geographical Information Systems **Second semester (all but one are 5 ECTS)**: **ES7043**: Hydrology and Groundwater Quality **ES7055**: Earth System Science – Deep Time **ES7027**: Environmental Policy **ES7028**: Resource Development: Managing Impacts on the Environment **ES7049**: Practical Environmental Skills (field trip) **ES7058**: Project Planning (10 ECTS) **Summer period:** **ES7052:** Dissertation (MSc thesis; 30 ECTS) Course Handbook 2023: https://naturalscience.tcd.ie/assets/pdf/Environmental%20Science%20MSc%20Course%20Handbook%202023-2024.pdf
Career outcomes	Positions held: Environmental Analyst, Data Analyst, Environmental Inspector, Product Specialist, Environmental Scientist, Quality Assurance Officer, Environmental Regulation Consultant GIS Technician, Science Writer, Project Engineer, Research Fellow, IT Specialist, Processing Operative, Environmental Consultant, Project Manager, Corporate Sustainability Officer Graduate position Companies: Sustainable Energy Authority of the Royal Netherlands Institute for Sea Research, Gas Networks Ireland, Inland Fisheries Ireland, CSO, Noonan, SeaPlan, Boston, Headcount Engineering, Quatrics, Jacob Engineering, KERRY Group, Icon Group, Mallon Technology Teagasc, Boylan Engineering and Environment Consultancy, Ervia, Veolia, RPS Europe, US EPA, Pfizer, Roughan & O'Donovan, RSK Ireland, Clanwilliam Group, MKO Ireland

Entry Reqts and additional assessments	Application deadline: 31st July
	Upper second (2.1) or above honours degree in any discipline
	Additional assessments: No additional assessment.

Programme name	MSc in Biodiversity and Conservation (18 places)
Unique Features	Taught through lectures, practical classes, field-based learning, guided reading, discussion groups and web-based methods.
	Residential spring field course in South Africa.
	Modules include:
	• Human interactions with biodiversity
	• Practical environmental assessment
	• Impact of environmental change on biodiversity
	• Data handling and analysis
	• Taxonomy, systematics, and ID skills
	The course has access to:
	• Molecular laboratories
	• Geographic Information Systems Lab
	• Zoological Museum
	• Geological Museum
	• Herbarium
	• Botanic Garden
	• Science Library
	• Departmental Libraries
	Course Handbook 2023: https://naturalscience.tcd.ie/assets/pdf/BioCon23-24.pdf
Career outcomes	Provides in-depth training and experience for those looking to further their career in biodiversity and its conservation in a range of international NGOs, government departments and environmental consultancies.
	Positions held:
	Wildlife Coordinator, Field Research and Spatial Coordinator, Head of Research and Rehabilitation, Marine Scientist, GIS Officer, Regulatory Control Analyst, Conservation Research Technician, Technology Consultant
	Companies:
	The Sparrow Weaver Project, Tswalu Kalahari Reserve, South Africa, Alouatta Sanctuary Panama, EPA, Irish Wildlife Trust, Durrel Wildlife Conservation Trust, Saker Falcon, Reintroduction Project, Mongolia, Irish Water, NBC Global Finance Limited, Department of Environment, Sustainable Development and Climate, PwC, WR Recycling
Entry Reqts and additional assessments	Application deadline: 30th June
	Upper second-class honours (2.1) degree in a science subject that includes significant components of botany, zoology, or a relevant life science. Candidates with relevant and significant experience as professional practitioners in biodiversity management or policy may be accepted with lower qualifications.

	Additional assessments: No additional assessment.

Programme name	Masters in Development Practice (30 places)
Unique Features	Part of the global network within a Secretariat at the United Nations Sustainable Development Solutions Network. Part of the only global educational network of its kind, involving more than 30 universities across all continents. Students are encouraged to spend up to three months completing cross-disciplinary fieldwork in developing locations such as Rwanda, Tanzania, Uganda, Sierra Leone, Senegal, Brazil, Malawi, India, Vietnam and Madagascar, and also the US. Placements include: UN Women, WHO, Food and Agriculture Organisation of the UN, OECD, World Bank, UNESCAP Modules include: • Globalisation and African Development • Smart and Sustainable Eco-Cities • Gender and Development • Global Health • Sustainable Agriculture and Land Use • Development Economics • GIS • Climate Change: Science, Development and Justice • Civil Engineering for Sustainable Development Course Handbook 2023: https://naturalscience.tcd.ie/assets/pdf/MDP%20Handbook%202023-24.pdf
Career outcomes	Positions held: Sustainability Analyst, Researcher, Community Development Lead, EDI Consultant, Environmental and Social Manager, Environment and Climate Change Support Officer Data Right Solicitor, Social Enterprise Research & Policy Manager, Climate and Energy Policy Assistant, Associate Fund Manager, Energy Transition/Renewable Energies & Energy Efficiency Advisor Companies: Tumaini la Maisha Tanzania, Positive Carbon, Bord Bia, IOM-UN Migration, ASU Laboratory for Energy and Power Solutions, GOAL Global, Diversity Institute, United National Global Impact, Smart Docklands, WWF, Oxfam, Rethink Ireland, UN Climate Change, IMPACT Initiatives, Congo, US Environmental Protection Agency, GIZ Tunisie, UN World Food Progamme, UNDP Samoa, PwC, KMPG, Diversity Institute
Entry Reqts and additional assessments	Application deadline: 31st July Upper second-class honours (2.1) degree in wide range of disciplines are accepted. Additional assessments: In some cases, applicant may be invited for an interview.

Programme name	MSc in Smart & Sustainable Cities (25 places)
Unique Features	First masters developed as part of Trinity's E3 initiative. The course focuses on the intertwining of Smart Cities and Sustainable Cities. It provides students with an in-depth understanding of smart and sustainable cities, using: (a) the tools of urban geography and planning to examine the spatial formation of smart cities; (b) methods in engineering and computer science to analyse the functions and applications of smart technologies. (c) insights from ecology to explore the environmental impact of both 'smart-city projects and wider transformations of contemporary cities. Core modules include: • Urban Governance • Smart Eco-Cities of the Future • Geographical Information Systems (GIS) • Urban Sustainability • Introduction to Machine Learning • Fieldtrip (a European city) • Industrial Placement (Mandatory) Optional Modules include: • Transportation Policy • Transportation Modelling & Planning • Energy Policy & Building Energy Demand • Urban Computing • Artificial Intelligence • Machine Learning • Environmental Policies • Human Interaction with Biodiversity • Climate Justice, Climate Change & Development Course Handbook 2023: https://naturalscience.tcd.ie/assets/pdf/SSC%20Handbook%202023-24FINAL.pdf
Career outcomes	First cohort started in September 2021; no employment data collected as yet. Career options after graduation include urban and environmental planning, policymaking, sustainability consultancy, academia, industry and big data analysis Placement providers include: Digital HQ, Smart Dublin, Arup, Aecom, Dublin City Community Cooper, Ireland China Science & Technology Association, RBA Architects, Zipp Mobility, Sweeney Landscape Design
Entry Reqts and additional assessments	Application deadline: 31 July Upper second (2.1) or above honours degree in social science or science-based course such as Engineering, Sociology, Computer Science, Economics, Geography, or cognate fields. Applicant must include a motivation letter in the application. Additional assessments: Shortlisted candidates may be invited for an interview.

E3 Scholarships - https://www.tcd.ie/e3/education/scholarships/

<u>**FOR UNDERGRADUATE PROGRAMMES**</u>

Undergraduate E3 Balanced Solutions for a Better World Scholarship

Link to Online Application Form: https://www.tcd.ie/e3/education/scholarships/
1-year scholarships valued between €2,000 to €5,000 each and scholarships valued at €4,000 for all 4 years of study. Scholarships are applied as a reduction to the tuition fees.

Eligible Majors and Course Level:
BAI Engineering
BSc (Ing) Engineering with Management
B.A. Biological and Biomedical Science
B.A. Geography and Geoscience
B.A. Computer Science
Joint Honours Computer Science and Business
B.A. Computer Science, Linguistics and Language
Management Science and Information Systems Studies
Joint Honours Computer Science and Geography
Joint Honours Computer Science and Economics
Joint Honours Computer Science and Linguistics
BSc Environmental Science and Engineering

Who can apply: Applicants who have non-EU status and will pay tuition fees at the non-EU rate and hold an offer letter for any of the programmes above.

Selection Criteria: The scholarship will be assessed based on academic achievement, and evaluation of the applicants' potential to contribute to the overall TCD community.

<u>**FOR POSTGRADUATE PROGRAMMES**</u>

Postgraduate E3 Balanced Solutions for a Better World Scholarship

Link to Online Application Form: https://www.tcd.ie/e3/education/scholarships/
Award: 1-year scholarships valued between €2,000 to €5,000 each, applied as a reduction to the tuition fees of a full-time programme.

There are several scholarships available in the following areas: Full-time taught postgraduate programmes in the **School of Engineering, the School of Computer Science and Statistics, the School of Natural Sciences and MSc in Energy Science.**

Who can apply: Applicants who hold an offer letter for a Postgraduate Taught Masters programme in the School of Engineering or the School of Computer Science and Statistics, or the School of Natural Sciences or for the MSc in Energy Science.

Selection Criteria: The scholarship will be assessed based on academic achievement, and evaluation of the applicants' potential to contribute to the overall TCD community

For information about application process and deadlines, please visit the E3 Scholarship website. Please e-mail e3.team@tcd.ie if you have any questions regarding the E3 Scholarship.

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

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One on One Engagement Session
1:1 call with E3 Student Recruitment & Admissions Team is available for prospective students, applicants and offer holders.
Booking link