B.Sc (Hons) and Diploma in Information Systems

Information Systems (IS) is the study of the different ways in which information and communication technologies (IT) can best be applied—in business, government and society.

Organisations need IT professionals with broad, diverse capabilities and knowledge, including well-developed business and communication skills.

Diploma in Information Systems
If you are (or intend to become) an IT professional, no matter what your background, this two-year Diploma course is for you. Upon graduating you will be equipped to apply skills such as analysis and design, project management and support in business, industry and government.

The syllabus includes technologies, techniques and methods drawn from research and internationally-accepted best practice.

After completing the course you will:
- Be able to analyse, design, develop and implement appropriate IT solutions;
- Understand the principles, methods, tools and architectures used in the development and management of IS and IT;
- Be aware of pressing current issues concerning the use of IT in practice;
- Possess business, communication and IT skills, developed through extensive practical assignments and project work.

B.Sc (Hons) in Information Systems
If you wish to be a senior IT professional or manager, this flexible two-year Honours Degree course is for you. Upon graduating you will be equipped to manage in all sectors of the IT industry and in a range of business functions. The course offers two major streams, in Information Systems and Computer Science. You may choose from a range of elective modules. After completing the course you will:
- Understand the role, application and potential of IT in business, industry, government and society;
- Have well-developed business, communication and IT skills;
- Be able to:
  - create and develop IT policies/strategies;
  - manage IS and IT operations;
  - design, develop and implement appropriate IT solutions;
- Have in-depth knowledge of one or more specialist IT topics that interest you.

Once you complete the 2-year Diploma, the B.Sc course takes a further 2 years.

A message from Dr Simon McGinnes
Director, Trinity College Dublin Diploma and B.Sc (Hons) Information Systems (IS) Programme

“More people than ever now work in and with IT. Demand for computing professionals and IT-literate businesspeople remains buoyant, and Ireland is facing IT skills shortages. Those working in IT can be assured of excellent career prospects. There is particular demand for IT specialists who are also effective business people, with good business knowledge and strong communication skills. That is why the Trinity IS Programme stresses the importance of broad, integrated business skills and knowledge, in addition to technology-based subject matter.”

“I look forward to welcoming you onto the IS Programme. I am sure you will find it both challenging and stimulating, whether you are already established in your career as an IT professional or intend to become one. Our course reflects the broad range of skills and knowledge now required by IT professionals, and we are increasing the degree of choice to reflect that diversity. According to our students, the course is rewarding but requires effort and commitment. We believe this is part of what makes the Trinity College Dublin IS Programme such a valuable learning experience.”
Why study Information Systems at Trinity College?

Programme objectives
The Trinity College Information Systems Programme is the result of a major collaborative effort between Trinity College and partners in industry. It addresses the needs of professionals who wish to:

- Become expert in developing, applying and managing IT;
- Build a deep understanding of business contexts and management practices relevant to IT and information systems;
- Understand the strategic, structural, and behavioural dimensions of IT-related business change.

Staff and students
The Information Systems Programme is delivered by experts, including experienced senior IT professionals and academics from Schools across College including Computer Science and Business.

Students include experienced IT professionals as well as those wishing to enter IT. They are drawn from organisations of all sizes: indigenous companies, multinational subsidiaries and the state, semi-state and financial services sectors. The large majority are mature students (aged at least 23 in January of the year of entry).

Focus
The focus in the programme is on the effective application of IT to problems in business, government and society. The programme is broad in scope and spans the whole continuum from business to technology. There are two major streams, in Information Systems and Computer Science; however, there is a good deal of flexibility so you can follow a path of study which suits your own interests.

- Modules towards the business end of the spectrum build an understanding of the nature of organisations and their management from functional and strategic perspectives. Particular emphasis is placed on the role of information and IT as an integrating force in the pursuit of competitive strategies.
- Modules with a stronger IT focus help you build an in-depth knowledge and hands-on skills using software, hardware and communications technologies. You will learn to identify and apply appropriate ways of exploiting the wide range of information technologies as an integral part of the programme.

Careers
Your Degree or Diploma in Information Systems from Trinity College will equip you for a range of jobs in IT. Some examples are given below. The mix of skills in each role varies, but in each case the ability to think logically and precisely, good teamwork, and excellent communication and collaboration skills are essential.

- Project manager: plan and coordinate projects, often involving teams inside and outside your organisation.
- IT consultant: advise business customers and develop systems, working as an individual or for a consultancy.
- Systems analyst: work with business people to map out requirements and liaise with developers to build systems.
- IT support: advise customers and end users on technical issues and provide hands-on assistance.
- Systems architect: apply technical skills and knowledge and mentor developers in designing large-scale systems.
- Analyst/programmer: create software to meet business needs, working with colleagues and customers.
- IT manager: plan, budget and oversee the activities of IS staff working in your organisation.

“I have benefited greatly in terms of increasing my knowledge in many aspects of Information Systems. The course has given me more than just a piece of paper. Many of the classes have added immensely to my overall level of knowledge in Information Systems and for that I am appreciative of the very high quality of the academic staff.

I have had the good fortune of having progressed in my career, and I feel that this progression is in no small part due to my B.Sc. in Information Systems. The course is not easy and takes a great deal of effort and commitment to complete. This is one of the factors that make the course so valuable. The resulting qualification is one that graduates can truly be proud of and potential employers can trust.”

Shane Moss
Trinity College Dublin B.Sc (Hons) Information Systems Graduate
About the IS Programme

**Hours**
Lectures and tutorials are normally held on three evenings per week over 22 weeks of the year. Saturday mornings may occasionally be required for practical classes. Please note that these arrangements may be altered during the programme.

**Self-study and e-resources**
You should be aware that project work and study time will be required in addition to the times mentioned above. Trinity College stresses the value of face-to-face contact between staff and students, for the educational and motivational value it brings.

However, we recognise also that in today’s busy world many students find it useful to take advantage of the convenience that online study can offer. Accordingly, we make a range of resources available to students for secure online access and e-learning, which complements teaching delivered by traditional means.

**Syllabus**
This syllabus shown below applies to students joining the programme in the academic year 2013/2014, but may change over time. The syllabus is subject to frequent review in order to reflect the changing needs of the rapidly-evolving IT/IS field.

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† Students choose 6 modules in year 3, and 4 modules plus project in year 4

“The course was very relevant to the area we were working in, and our dissertation research allowed us to further progress areas within our workplaces. The team exercises proved a great learning curve and transferred well into our business lives. Learning to manage projects and deal with different team members gave us invaluable experience that has stood to us as we progress through our careers. The range of topics covered on the course by experienced lecturers allowed us to explore and gain an understanding of the real practicalities of business.”  **Fidelma Cotter and Natasha Cray, Trinity College Dublin B.Sc (Hons) Information Systems Graduates**
Module outlines

Year 1 (Diploma)

CS1011 – Information systems
This module addresses concepts, technologies and methods relevant to information systems, and looks at the widespread and varied applications of information and communications technology (ICT) in business, government and society. Students investigate present-day systems and look forward to possible future trends.

CS1102 – Internet systems
Students are introduced to the process of meeting business needs with ICT, developing the skills of evaluation, analysis and design. Students learn to create commercial websites, carrying out planning, research, content development, system design and development, and dealing with issues of accessibility and usability.

CS1103 – Organisation & management
The module offers an introduction to business studies. Students explore organisational structures, processes and management in the light of theory and practice. Topics include business objectives and strategy, accounting and finance, marketing, production and operations management, and human resource management.

CS1104 – Information systems development I
Integrating the theory and practice of information systems engineering, this module fosters key design and development skills. Students create substantial software applications using high-level development tools. Principles of programming, graphical user interface design and system architecture are explored and applied.

CS1105 – Business methods
This module provides the student with a variety of useful transferable skills, including interpersonal communication, collaboration, thinking, problem-solving and quantitative techniques. The student’s growing capabilities are supported by theoretical perspectives and practised in real-world contexts.

CS1106 – Information systems practice I
This module fosters the student’s professional capabilities through progressive acquisition and integration of relevant skills. Working individually and in teams, students complete realistic lab and classroom-based exercises of increasing complexity, integrating technical knowledge with business skills and theory with practice.

Year 2 (Diploma)

CS2101 – Information & communications technology
In this module students investigate the network and its implications: the technologies underlying enterprise and global information systems and the increasingly wide range of services, architectures and applications enabled by telecommunications technologies such as the internet and mobile computing.

CS2102 – Enterprise architecture & solution definition
Through business case studies, students learn to define enterprise architectures, aligning business processes and IT infrastructure with the goals and priorities of the organisation. Students practise the skills of eliciting and analysing organisational requirements and gain experience of the information systems design process.

CS2103 – Project management
This module introduces the student to the universal concepts, principles and terminology of project/programme management. Students practise planning, monitoring and project control skills using suitable tools, with particular attention to perennial issues in IS projects such as communication, cost, quality and risk.

CS2104 – Information & database management
This module equips students with the skills to analyse information structures and design data architectures. Students explore a variety of storage models and techniques including database and data warehousing as well as less structured methods, learning about fundamental issues such as integrity, security and recovery.

CS2105 – Information systems development project
Organised into structured teams, students work with business clients to carry out planning, analysis, design, development and implementation of ICT-based solutions for specified business problems. Teams formally present the results of their projects and each student documents their work in a dissertation.
Year 3 (B.Sc)

**CS3101 – e-Business**

Students learn to apply techniques and technologies in support of electronic business and electronic commerce across a range of market sectors and functional areas. Business drivers and alternative models are explored, as well as management issues such as payment processing, security and legal considerations.

**CS3102 – Information systems development II**

In this module students extend their programming capabilities with the concepts and skills necessary for high-quality object-oriented development. Using industry-standard modelling and design techniques, students learn to apply standard patterns and frameworks to produce robust, flexible and extensible software.

**CS3103 – Business, management and IT**

This module provides the foundational skills and knowledge required for IT professionals to understand and participate in organisational change. Students learn more about the principles, concepts and theory of business and management, particularly with reference to ICT and its special role in the change process.

**CS3104 – Information systems strategy**

This module addresses the concept of strategy and the skills of strategic information systems planning. Students analyse business and IS strategies and explore the relationships between them. Via case studies, students develop expertise in formulating IS strategy and in quantifying its implications for business operations.

**CS3105 – Law and IT**

This module offers an overview of legal principles relevant to business ICT from supplier and customer’s perspectives. Students learn to set policy appropriately and to work with legal constructs such as contracts and service level agreements, exploring their interaction with models of ICT governance and management.

**CS3106 – Information systems practice II**

Bringing together work done to date, this module helps to build professional excellence through continued acquisition and integration of practical skills and theoretical knowledge. Students work individually and in teams on lab and classroom-based exercises designed to extend and integrate their prior learning.

**CS3107 – Social computing**

This module addresses the increasing impacts of social computing on society and business. Students will experience different ways in which social computing technologies can be applied. Social computing encompasses social networking, Enterprise 2.0, internet activism/advocacy, crowd sourcing, review systems, social/viral marketing, blogging, podcasts, wikis and other collaboration tools.

**CS3108 – Systems analysis & design**

Analysis and design are core skills for information systems professionals. This module gives students first-hand experience with contemporary techniques used in the analysis and design of information systems. Students will understand the important role that analysis and design play in the information systems process.

Year 4 (B.Sc)

**CS4101 – Information security**

This module gives students a comprehensive appreciation of information systems security concepts and techniques including privacy and data protection. Students learn how to factor security considerations into their professional practice, and practise useful techniques such as risk analysis and contingency planning.

**CS4102 – Innovation**

This course is designed to enable students to handle innovation ("getting new things done") in business effectively, with special emphasis on creativity, the use of intellectual property and the special problems of raising seed and venture capital for innovative projects and of protecting investment in innovation.

**CS4103 – Information systems management**

This module is concerned with management of the IS function and infrastructure in its broadest sense, encompassing data centres, end-user computing, outsourcing and facilities management. Through participative case studies, students gain experience of management issues concerning the full range of IS activities.

**CS4104 – Advanced information systems**

Through presentations by external and internal experts, online seminars and workshops, this module addresses pressing contemporary topics in IT and IS including practitioner-oriented themes and cutting-edge research results. Students investigate, discuss, present and write about topics that interest them.

**CS4105 – Final-Year project**

Working individually or in groups, students address a significant question, topic or problem, using formal research methods or through more practice-oriented investigations such as consulting work, R&D or system development. Students present their results and formally document their work in a comprehensive report.

**CS4106 – Information Systems Development III**

This advanced module allows students to build on their expertise in information systems development and software engineering techniques. Students tackle a series of hands-on design and development challenges, and become aware of current developments in software and software engineering research.
Student support and facilities

Trinity College provides excellent support facilities that address the needs of part-time students.

Assistance

**College tutors**
Each student is allocated a tutor, an academic staff member who can offer confidential support in all aspects of College life, including assistance with financial, personal and educational issues.

**Programme secretariat and technical support**
Programme support staff work special hours to ensure that part-time students are catered for. This means that you will be able to access assistance at a time that suits you.

**Demonstration staff**
A group of qualified demonstrators is available to provide guidance, advice and support for coursework assignments, projects and tutorial sessions.

**Central services**
All of the main central support services of Trinity College are available to part-time students, including the careers office, counselling services, medical services, chaplains, etc.

**Academic Resources**

**Libraries**
The TCD copyright library is an important resource available to students. Libraries include the Berkeley, Hamilton and Lecky. The libraries provide a comprehensive range of services to assist students with their studies, including extensive online resources.

**Computer labs and meeting rooms**
Computer laboratories and meeting rooms are available for student use in the course of their studies. Some of these facilities are available 24 hours per day, 7 days per week.

**Research facilities**
Students have electronic access (both off campus and on) to a wide range of subscription-only publications including academic journals and conference proceedings. Trinity College’s IS group conducts research in a range of topics relevant to the IS field.

**Other facilities**

**Food and drink**
Light meals and refreshments can be obtained in College in the early evening. The Arts Café remains open for at least one hour after lectures start on teaching nights. Information Systems students also have use of a common room with kitchen facilities.

**Accessibility**
Parking is available at discounted rates for TCD students in car parks near College. Pearse DART station is adjacent, as are most bus routes. Both Luas lines and the Central Bus Station can be reached by short walk from College.

**Sports facilities**
The College boasts a 6-storey state-of-the-art Sports Centre with:

- 25m 6 lane swimming pool with floating floor;
- 400sq m Fitness Theatre with over 60 exercise stations;
- Challenging climbing wall - 18m wide x 11 m high, 14 routes, suitable for beginner and advanced levels;
- Fitness Class Studio & Spin Studio;
- Ancillary hall for martial and other sports (27m x 14m);
- Sauna & Steam room;
- Two large sports halls for indoor sports (27m x 45m).

The Sports Centre offers a comprehensive programme of exercise classes from beginner to elite athlete levels, and many sporting clubs. For more information, visit [www.tcd.ie/sport](http://www.tcd.ie/sport).

**Cultural and leisure facilities**
Many other leisure activities are available on campus including a wide range of societies and clubs. Trinity College’s city-centre location places it close to Temple bar and other cultural and entertainment centres.
Entry requirements

Diploma in Information Systems

**Mature Students**
The majority of students on this programme are mature (aged 23 on 1st January of year of entry). Mature applicants are not required to meet the University’s matriculation requirements. Assessment is based instead on work experience and other formal and informal qualifications.

**Other Students**
For non-mature students, the minimum requirement for entry to the diploma is six passes in the Leaving Certificate, or equivalent, with a minimum Grade C3 at ordinary level English and Mathematics. In addition, candidates must have at least two years’ relevant work experience.

B.Sc (Hons) in Information Systems

**Students with TCD Diploma in Information Systems**
Students who successfully complete the Diploma in Information Systems may apply for entry to the final two years of the Degree in Information Systems, either immediately upon completing the Diploma or following a break of one or more years.

**Students with Other Qualifications**
Holders of other qualifications at a sufficiently high level, which are deemed equivalent to the Diploma in Information Systems, may also apply for direct entry to the Degree in Information Systems.

How to apply

**Application forms**
You can apply online at www.scss.tcd.ie/undergraduate/information-systems

**Closing date**
The closing date for applications (for consideration for the 2013/2014 intake) is 30th June 2013. Late applications may be considered at the discretion of the Course Director and subject to availability of places.