Mobile and Ubiquitous Computing applications and systems are now strongly established as fundamental to the “Internet of Things” and are driving subsequent generations of technology evolution. The M.Sc. in Mobile and Ubiquitous Computing in Trinity College Dublin provides an excellent, and globally unique, grounding in the concepts, technologies and skills that underpin this future vision, and in the principles and practices of business technology leadership necessary to translate these innovations into compelling products and services. Creativity and innovation are fostered throughout the course, and cohere around a strong emphasis on practical engagement with the technologies, development and business strategies, used in building mobile, ubiquitous and “Internet of Things” computing systems. A recent graduate summarised the course as follows: “It’s not as much about the technology of today, but the technology of tomorrow”, and a prominent external examiner described the course as being “like a technical MBA”.

The individual technologies that comprise the Mobile and Ubiquitous computing vision increasingly underpin modern Computing and Engineering practice. Technical course elements include modern communications and wireless platforms, advanced distributed systems engineering, “big data” management and analysis, embedded devices, security and end user interaction design. These are tightly aligned with business innovation and technical management strands to position graduates for domain specialist, technical leadership, management and start-up innovation roles. The course is carefully aligned with the recommendations of the professional Engineering and Computer Science bodies, and targets technology areas that have been clearly identified by global employers, thought leaders, and policy makers as “key” and “critical” to progress over the next 30+ years. Graduates from the course will have demonstrated expertise in the techniques, technologies, innovations and business practice that underpin innovation in modern mobile, ubiquitous and autonomous systems and infrastructure.

The student intake has a strongly international dimension, comprising a vibrant mix of different nationalities, academic backgrounds and career aspirations. Students join the course from as far afield as the U.S.A., Russia and Asia alongside colleagues from Europe, the UK and Ireland. Experienced professionals seeking to reposition, or more rapidly advance, their careers form an increasingly significant element of the annual student intake. Graduates from the course are in strong demand with global employers, both nationally and internationally, with most participants having secured employment prior to completion of their studies.

This M.Sc. course is clearly distinguishable from other M.Sc. programmes, both within TCD and internationally. It incorporates the key facets of mobile, ubiquitous and autonomous technologies: innovative hardware prototyping and productisation; wireless communications and networking protocols and devices; integrated mobile system and solution development; “big” data creation, management and exploitation; end-user interactivity and practical domain creativity; business process, management and entrepreneurship.

In summary the M.Sc. in Mobile and Ubiquitous Computing provides students with an enviable opportunity to position themselves as knowledgeable, expert innovators, thought leaders and effectively entrepreneurs in this globally impactful domain.

The Course

This one year, full-time M.Sc. course comprises a blend of taught modules, practical assignments and an independent research project submitted in the form of a dissertation.

TAUGHT MODULES MAY INCLUDE

- **Data Communications and Wireless Networking** extends from fundamental principles and concepts through to advanced wireless and next generation networking solutions;
- **Vision System** provides a firm understanding of the theory underlying the processing and interpretation of visual information and the ability to apply that understanding to ubiquitous computing problems;
- **Middleware for Ubiquitous Computing** exposes students to the complexities involved in designing and building distributed applications in a ubiquitous context;
- **Real-time and Embedded Systems** includes the design, development and evaluation of real-time and embedded systems of varying complexities;
- **Human-Computer Interaction** imbues students with expertise in interactive system design and usability strategies and approaches;
- **Information Architecture** explores the management, delivery, interoperability and interactions of information and information systems.
- **Mobile and Autonomous Systems Innovation** emphasises identifying, understanding and evolving emerging and disruptive technologies in the domain.

**Mobile and Transient Security** develops new and innovative approaches to security and privacy for highly dynamic, mobile and transiently connected devices and networks.

School of Computer Science & Statistics (SCSS)
Faculty of Engineering, Mathematics and Science
Career Opportunities
Ubiquitous computing technologies, including wireless communication, sensor-based systems, and context-aware systems, are driving the deployment of the Internet of Things and the next generation of Information Technology (IT). They are facilitating improved quality of life for an increasingly aging population, supporting rehabilitation from serious injuries, enabling lifelong learning outside the traditional classroom, empowering remote infrastructural monitoring and actuation, and helping realise smart cities and a smart world – in short most recent (and planned future) technological innovations are built on mobile and ubiquitous computing technologies.

Amongst employers, demand for creative, innovative professionals, with skills and experience in the mobile and ubiquitous computing domain, continues to grow rapidly and this demand creates almost endless opportunities for those with the requisite skills to participate. It is common for participants to have their future employment roles secured prior to completing the course. The M.Sc. in Mobile and Ubiquitous Computing produces graduates with both the technical and business skills necessary to contribute, prosper and succeed – either within an existing corporate structure, in a startup, or as an individual entrepreneur.

Entry Requirements
This course is open to graduates who have achieved the equivalent of at least an upper second-class honours degree, or better, in computing, computer engineering, information technology, or a related discipline. Well qualified candidates from other numerate disciplines such as mathematics, engineering, statistics and physics, and those with appropriate domain experience, are also encouraged to apply. Candidates will be required to provide evidence of their programming and computing skills and experience.

Further Information
Further Information, Application Details, Fees and Closing Date available at:

Web: www.scss.tcd.ie/postgraduate/mscmuc
Email: postgraduate@scss.tcd.ie

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School of Computer Science & Statistics (SCSS)
Faculty of Engineering, Mathematics and Science

The College reserves the right to update or change syllabi, fees, timetables or other aspects of the course at any time