



NUI MAYNOOTH
Ollscoil na hÉireann Má Nuad

MSc DEPENDABLE SOFTWARE SYSTEMS

**SCHOLARSHIPS FOR STUDENT ENTRY
SEPTEMBER 2012–2017**

**NUI MAYNOOTH
GRADUATE SCHOOL**

ERASMUS MUNDUS

A cooperation and mobility programme in the field of higher education for:

- the enhancement of quality in European higher education;
- the promotion of the European Union as a centre of excellence in learning around the world;
- the promotion of intercultural understanding through cooperation with third countries as well as for the development of third countries in the field of higher education.

Software is the critical component of the everyday products and services that we take for granted. It allows us to manage global finances, regulate power generation and telecommunications, control transport and public services, and securely store personal information. Unfortunately, this increased dependence on software has not been matched by a similar increase in software dependability, with the cost of software malfunction, to the world economy, currently estimated to be in the region of a hundred billion euro per year.

Protecting the long-term position of our software and related industries, relies heavily on the availability of high-quality software engineers who are experts in building and sustaining dependable software systems.

MSc DEPENDABLE SOFTWARE SYSTEMS

PAC CODE

MHG60

DURATION

2 year Full-time

CLOSING DATE

31 January 2012 for scholarships,
30 June 2012 for non-scholarship applications

COMMENCES

September 2012

FACULTY

Science & Engineering

2 Year Masters Programme

With the support of the Erasmus Mundus programme of the European Union, the National University of Ireland Maynooth (NUIM) in Ireland; the University of St. Andrews (UStA) in Scotland; and Université Henri Poincaré Nancy (UHP) in France are offering a two-year double Master Programme, named Erasmus Mundus MSc in Dependable Software Systems (DESEM).

This new Masters programme, coordinated by the National University of Ireland Maynooth, provides graduates with the knowledge, skill and in-depth technical understanding of the key concepts required to design and build dependable software systems. This will be achieved by bringing together the theory and practice of software development and, in particular, through participation in research driven and commercially relevant projects. The result will be graduates who have a solid grounding in the logical reasoning and problem-solving skills needed for a career in a software industry.

A truly European Masters experience

Each student on the programme will study in two of the three partner universities achieving the double Erasmus Mundus MSc in Dependable Software Systems, through the award of any two of the following degrees (120 ECTS).

- Erasmus Mundus MSc in Rigorous Software Development (NUIM, Ireland)
- Erasmus Mundus MSc in Software Engineering (UStA, Scotland)
- Diplôme de Master (Mention Informatique) (UHP, France).

Each partner university has long-standing local Masters programmes in Computer Science addressing specialised topics in software development. Courses are taught in English and students will be integrated into the culture of the country where they study through language and cultural courses provided by the Universities which they attend.

Who should apply?

Those who have an honours degree in Computer Science or a related discipline with an average grade of 60% (equivalent to a B, II.1, or assez bien) or above. Extensive industrial experience may be considered as equivalent to academic qualification although such applicants will normally be subject to interview.

What careers will graduates be suited to?

Graduates will be equally suited to a career in research where they will develop new techniques for developing more dependable software, or a career in industry where they will develop dependable industrial strength software.

What are the fees?

Tuition fees are €8000 per year for Third Country students and €4000 per year for European students. Scholarship recipients will have their tuition fees paid in full with contributions to living costs and travel via their scholarship.

What scholarships are available?

We expect to award up to 16 scholarships per year for students participating in the Erasmus Mundus MSc in Dependable Software Systems. Short term scholarships are also available to support scholars who wish to participate in teaching/research activities concerned with this programme.

Category A student scholarships (Third Country Students)

- Contribution to travel and installation costs: €8000 per course
- Participation costs (including tuition fees and insurance coverage): €8 000 per year
- Monthly allowance: €1 000 per month

Category B student scholarships (European Students)

- Participation costs (including tuition fees and insurance coverage): €4000 per year
- Monthly allowance: €500 per month

Scholar Scholarships

- Living allowance (including travel costs): €1 200 / week for a minimum duration of 2 weeks and a maximum duration of 3 months per scholar.

How do I apply?

Online application at www.pac.ie/NUIM
For further details on the application procedure see <http://erasmusmundus.ie>

Application Deadlines for ERASMUS MUNDUS MSc Dependable Software Systems (DESEM)

- * 31st January 2012 for scholarship applications to the DESEM course
- * 30th June 2012 for non-scholarship applications to the DESEM course (non-EU and EU applicants)

A PARTNERSHIP OF 3 LEADING EUROPEAN UNIVERSITIES

National University of Ireland Maynooth

The expertise at the National University of Ireland Maynooth is in the development of quality software coupled with the transfer of this knowledge to industry. Through the rigorous software development stream, students are exposed to the technical, methodological, and organizational aspects of this area so that successful participants will be able to develop safety critical software for the industrial and commercial sectors. The primary emphasis in this stream is on the techniques for rigorous scientific software development, grounded in a hands-on understanding of the applicability of these techniques. Consequently, this stream builds on experience of the use of these techniques in industrial projects and includes the opportunity of completing an industry related project. NUI Maynooth has been supervising industry based projects in software engineering for over 15 years of the MSc in Computer Science (Software Engineering) and through industrial work experience programmes for the undergraduate students.

University of St Andrews, Scotland

The role of the software systems streams at the University of St Andrews is to present expertise in the practical aspects of dependable and critical software systems. As systems become more and more distributed and embedded in society so does the complexity and criticality of the failure modes, locations and consequences.

By understanding the software, social and distributed systems issues presented in the Distributed Systems and Software Systems streams, graduates will have a unique and valuable set of skills. Students also have the option of specialising in Knowledge-based Systems where they learn about the contribution of artificial intelligence to the toolsets available for the development of reliable software systems. The project work in association with one of St Andrews highly acclaimed research programmes will address key software development problems in dependability, architecture and social informatics.

L'Université Henri Poincaré, Nancy

L'Université Henri Poincaré, Nancy focus on the theoretical foundations that are required for the construction of reliable software systems. Much of the expertise here highlights the way in which formal reasoning has integrated itself into a number of software development tools, techniques and methods. This stream will draw from the breadth and depth of this experience, placing emphasis on the practical application of formal reasoning in real problem solving, and industrial strength software projects.

Contact Details

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Further Details

<http://erasmusmundus.ie>

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How do I apply?

Online application at www.pac.ie/NUIM

www.pac.ie
Online application

SOFTWARE ENGINEERING & COMPUTER SCIENCE AT NUI MAYNOOTH

NUI Maynooth is a centre of excellence for the development of dependable software systems, offering science and software engineering graduates the knowledge, skills and in-depth technical understanding required to succeed in the software industry. We offer a range of Masters, Diploma and PhD research programmes for postgraduate students, combining academic research with industrial placements to nurture a new generation of software engineers grounded in the latest technological advances. For further information visit: <http://cs.nuim.ie>

Computer Science – Structured PhD/MSc Research Programme **MHG02 PhD (FT)** **MHG03 PhD (PT)** **MHG04 MSc (FT)** **MHG05 MSc (PT) (Full-time/Part-time)**

The aim of the Structured PhD in Computer Science is to provide the student with an opportunity to carry out a significant body of research work with world-class academic support. Research postgraduates are typically (though not exclusively) funded during their research.

Course Coordinator John McDonald
Tel +3531 708 3847
Email admin@cs.nuim.ie

Deadline Research applications are generally accepted at any time

Erasmus Mundus MSc in Dependable Software Systems **MHG60 (Full-time)**

The first of its kind in Ireland, this Masters programme offers a 2 year Double Masters with students based at NUIM, Ireland for one year and a second year at one of two partner universities.

Course Coordinator Dr Rosemary Monahan
Tel +3531 708 3847
Email Erasmus.Mundus@cs.nuim.ie

Deadline June 30th 2012
(Scholarships January 31st 2012)

MSc in Computer Science (Software Engineering) **MHG50 (FT)** **MHG51 (PT) (Full-time/Part-time)**

This Masters degree exposes graduates in computer science and related disciplines to the many facets of IT and software engineering. Many students gain full-time employment with the company who sponsors their work placement.

Course Coordinator Dr Rosemary Monahan
Tel +3531 708 3847
Email smsc-cd@cs.nuim.ie

Deadline 31st August 2012

MSc in Geocomputation **MH50B (Full-time)**

The course aims to provide a sound theoretical and practical foundation in geocomputation for students with suitable undergraduate backgrounds including mathematics, engineering, geography, computer science, geomatics and professionals working in related disciplines. There is a growing demand worldwide for employees skilled in geospatial technologies, including in the integration of GIS into government policy development.

Course Coordinator Martin Charlton
Tel +3531 708 6972
Email ncg@nuim.ie

Deadline 30 July 2012

Postgraduate Diploma in Science (Software Engineering) **MHG56 (Full-time)**

NUIM exposes graduates in computer science and related disciplines to the technical, the methodological, the organisational skills required by industry. Students are given the foundation to go on and lead major projects in software engineering in industrial and commercial sectors.

Course Coordinator Dr Rosemary Monahan
Tel +3531 708 3847
Email smsc-cd@cs.nuim.ie

Deadline 31st August 2012

Higher Diploma in Information Technology **MHG54 (Full-time)**

The Higher Diploma in Information Technology is a postgraduate conversion course intended for graduates whose primary degrees are not in Computing and Information Technology, increasing their ability to that of 3-year computer science graduates over an intensive 1 year programme.

Course Coordinator Dermot Kelly
Tel +3531 708 3847
Email admin@cs.nuim.ie

Deadline 31st August 2012

Higher Diploma in Science (Computer Science) **MHG58 (Full-time)**

The course brings graduates to a level equivalent to a 4-year degree in computer science and to apply for jobs in the IT and software development sectors. Graduates will be eligible to apply for further postgraduate study including taught MSc in Computer Science and MSc/PhD by research.

Course Coordinator Dr Adam Winstanley
Tel +3531 708 3847
Email admin@cs.nuim.ie

Deadline 31st August 2012

Higher Diploma in Software Engineering **MHG62 (Full-time)**

The Higher Diploma in Software Engineering is a postgraduate conversion course intended for graduates whose primary degrees are not in Computing or Information Technology, increasing their ability to that of 3-year software engineering graduates over an intensive 1 year programme.

Course Coordinator Dr Diarmuid O'Donoghue
Tel +3531 708 3847
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Deadline 31st August 2012

For further information on Computer Science Postgraduate Courses at NUI Maynooth, visit: <http://graduatestudies.nuim.ie>

Programme led by NUI Maynooth, in partnership
with University of St. Andrews, Scotland
and Université Henri Poincaré, France.

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