

 www.graduateschool.eps.hw.ac.uk

 www.sli-institute.ac.uk

Examples of previous dissertation titles

- FPGA Prototyping of the Quarc Network-on-Chip
- Thread-safe extension for MPI.Net
- Embedded DSP technology for Smart IP Camera in Advanced Surveillance Systems
- Self timing FPGA to SOC interface methodology for standard bus interface protocols

Assessment methods

Modules on the course may be assessed by coursework only, examination only or by a mixture of coursework and examination. Projects are assessed mainly by dissertation and poster session.

Graduate opportunities

A large number of students have found employment after completing the course. A number of students also continue to undertake PhD/EngD studies all over the UK and Abroad. Examples of a few destinations of graduates are as follows: Imagination Technologies, Synopsys, ARM, Freescale, Gige, Ateeda, Texas Instruments.

Post-Study Worker Scheme, working in Scotland

Overseas students who graduate with a degree from a Scottish University are able to take up employment in the UK for up to two years after completing their studies without requiring a work permit.

Further information can be found at the Post-Study Worker Scheme website.

 www.scotlandistheplace.com

Graduate Centre

At Heriot-Watt, the community of postgraduate students undertaking taught and research courses is 1,500 strong and has representation from around 100 countries. Around two thirds of the on-campus students are from countries outside the UK. With this in mind there are many opportunities for cross-cultural and interdisciplinary interaction. This opportunity has been recognised by the University through the creation of a new multi-million pound, purpose-built Postgraduate Centre. The Postgraduate Centre will house lecture theatre, seminar, study and social spaces for postgraduate taught and research students. Advanced video-conferencing facilities will enable research and teaching interactions between those on-campus with collaborators and off-campus students at many of our partner institutions worldwide.



Facilities and research environment

Staff in the School and from our partner universities have extensive research experience in a number of different aspects of system level integration. iSLI also benefits from strong links with industry, as a result of which it is able to secure access to leading edge design tools, state of the art IP, industrial design platforms and development systems.

Fees and funding

This course has a number of SAAS funded places for UK and non-UK EU students. Applicants interested in these studentships, or wanting to enquire about other scholarship opportunities, should contact the EPS Graduate School at pgt@eps.hw.ac.uk.

Overseas students should contact the School and iSLI for further details of the Overseas Scholarship Awards Scheme or other Scholarships at pgt@eps.hw.ac.uk.

iSLI also has a number of scholarships for overseas students, please contact msc@sl-i-institute.ac.uk for more information.


Entry requirements

Admission to the course requires a first or second class honours degree, or its overseas equivalent, in a numerate, scientific or design orientated discipline. If you do not already hold a First or Second Class Honours degree it may still be possible to admit you to the Diploma course. In this case, if your examination performance is satisfactory, you may then be recommended for transfer to the MSc course.

Applicants for whom English is not their first language and who do not already hold a degree in which the teaching was in English must satisfy the university minimum requirements for competence in English. These are TOEFL – 213 (written test); 550 (computer based test); 80 (internet based test); IELTS at grade 6.0 or Cambridge Proficiency Certificate of English grade C.

How to apply

Application forms can be found on the University's online postgraduate prospectus at:

 www.postgraduate.hw.ac.uk/apply

Alternatively you can download an application form on the iSLI website at:

 www.sli-institute.ac.uk

by clicking Education/Funding and Entry


Contact information

To request more information or to register your interest in the course, please contact iSLI at msc@sl-i-institute.ac.uk


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SCHOOL OF ENGINEERING AND PHYSICAL SCIENCES



The Engineering and Physical Sciences Graduate School unites the activities of advanced research training, postgraduate teaching and continuing professional development. The mission of the EPS Graduate School is to provide postgraduate education which is directly informed by the wide-ranging research activities present at Heriot-Watt University. The Graduate School is part of Heriot-Watt's School of Engineering and Physical Sciences which spans the disciplines of Chemistry, Physics, Mechanical Engineering, Electrical and Electronic and Computer Engineering, and Chemical Engineering.



SYSTEM LEVEL INTEGRATION

MSc/PG Diploma/PG Certificate

MSc - 12 months
PGDip - 9 months
PGCert - 6 months
**Full-time, part-time,
distance learning**

The Institute for System Level Integration (iSLI) is a collaborative venture of four of the UK's leading universities – Edinburgh, Glasgow, Heriot-Watt and Strathclyde. Its prestigious MSc is awarded jointly in the name of the four partner universities. iSLI is located at the Research Park of Heriot-Watt Universities Edinburgh Campus where the student can enjoy the campus life within the beautiful green surroundings making this an excellent learning environment.

Course aim/subject background

The aim of this course is to provide a follow-up to undergraduate courses in electrical or electronic engineering, computer science or equivalent. The course concentrates on the understanding of the many design aspects of system level integration of electronic devices. Those devices consist of both hardware and software so the course combines both hardware and embedded software design topics.

The course enables the students to:

- Develop detailed knowledge and critical understanding of the core skills in system level integration
- Develop and use a significant range of principal and specialist skills, techniques and practices in system level integration
- Be able to apply this knowledge directly to applications
- Acquire hands on design skills in the use of commercial design tools during lab sessions
- To apply the design flow used for designing electronic integrated systems
- Plan and execute a significant project of research, investigation or development in a specialist area within system level integration, demonstrating extensive, detailed and critical understanding of that specialism

Course structure

The course consists of two semesters for taught modules and a summer term for a relevant project in the field of System Level Integration. The taught modules consist of compulsory modules and optional modules grouped in a theme.

Compulsory Modules

- System Specification and Partitioning (15 Credits)
- Digital Signal Processing (8 Credits)
- Hardware Implementation (15 Credits)
- System Level Integration (15 Credits)
- Verification and Test I (8 Credits)
- Embedded Operating Systems (15 Credits)

The Three Themes are

- FPGA & Digital Signal Processing
- Embedded Software Design
- Hardware Design

The modules within each theme are

FPGA & Digital Signal Processing Theme

- FPGAs for DSP and Communication (15 Credits)
- DSP for Communications (15 Credits)
- Communication Networks and Multimedia Principles (15 Credits)

Embedded Software Design Theme

- Sensor Networks (8 Credits)
- Embedded Networking (8 Credits)
- Microcontrollers and Microprocessors (15 Credits)
- Communication Networks and Multimedia Principles (15 Credits)

Hardware Design Theme

- Analogue and Mixed Signal Design (15 Credits)
- Microcontrollers and Microprocessors (15 Credits)
- Verification and Test II (15 Credits)

Introduction courses are also provided for those needing to update their programming skills in "C", Verilog or Object Oriented Programming.

Project

During the academic year students will select a project topic provided by industry or Universities. The projects are worth 60 credits and are completed by the student submitting a dissertation.

Contact Hours

The contact hours for the taught part of the MSc in System Level Integration are in the region of 16 to 20 hours per week with a minimum of 20 hours of additional self-study and research required.

Opportunities for work placements

Industrial project placements are provided where possible but their availability cannot be guaranteed. Students are encouraged to identify suitable industrial placements and your Course Director can facilitate this process where necessary.

A few examples of companies that have provided projects include

Imagination Technologies, Blueflow Ltd, Ateeda, ARM, NXP, Mentor Graphics, Xilinx

