

EIT ICT Labs

EDUCATION

EIT ICT Labs' ambition is to become a role model in promoting cutting-edge, excellent education, setting an international standard, the EIT label, in responsiveness to both business and societal demands. The strategic cornerstones of the educational activities at EIT ICT Labs are based on:

The modern open innovation concept where innovations are often created in networks and where business and market forces are as important drivers as technology

The utilization of the Medici Effect where innovations is best supported by bringing together different academic fields and also other actors in business environment

Critical elements of the execution of the educational programs are strong integration with Co-location Centre activities in innovation and research and the utilisation of the Co-location Centres for co-operation between various stakeholders in the KIC.



EIT ICT Labs Education Action Lines consist of core master and doctoral programs aligned with thematic areas and enhanced with educational catalysts towards the world-class curricula with high impact. New content and new teaching methods are utilized. In order to prepare students to the challenges of their future careers coherent master's programmes and structured Ph.D. trajectories towards acquisition of transferable skills, especially innovation and entrepreneurship skills, are put into place

The learning format is deeply embedded into curricula and based on hands-on experience and learning-by doing activities in the Business Development Lab and summer schools, case studies with EIT ICT Labs stakeholders, and real world problems with the possibility to concretely advance from educational activities to real world entrepreneurship activities through EIT ICT Labs Business Action Lines. A unique set of possibilities will be offered to students at Master and doctoral level to reach out and be their best in creativity and innovation.

The leading theme has been aligning the curricula to the EIT quality criteria:

- Robust entrepreneurship education emphasizing the open innovation concepts
- Highly integrated, innovative learning-by-doing curricula
- Mobility, European dimension and openness to the world
- Outreach strategy and access policy

The various EIT ICT Labs educational programmes systematically develop systematically a set of skills and way of thinking to reach the strategic learning outcomes:

- Strong research or engineering excellence in the study area, general broad knowledge in areas close this area, and a good understanding of systematic research and engineering methodologies.

- Understanding the basics of innovation processes at the individual and organizational levels and getting practical training in adapting research based innovations to real technical or business problems.
- An open attitude and leadership for activity renewal and adaptation to rapid technology and socio-economic changes in the ICT-sector.
- Entrepreneurship in adapting one's own activity or organization to the changing global world.
- Awareness and skills for intellectual mobility and physical moving effectively between different actors and stakeholders.
- Commitment for responsibility of one's own life-long learning process

For this purpose, three learning orientations in curricula and courses need to be systematically integrated:

- **Business orientation:** Create interest in business and markets, technology and society. Understand how trends and cultural patterns influence the industrial landscape, and how key players operate. Identify which marketing strategies and business models are successful in ICT sector and in EIT ICT Labs thematic areas.
- **Design and engineering orientation:** Learning with emphasis on real life problems, integration and synthesis, interdisciplinary, process oriented projects, toolsets and labs, prototype building, testing and evaluation, simulation.
- **Skill orientation:** Learning by doing, self-steered, demand-driven, find knowledge when needed. Communication and presentation skills, project management, soft skills, negotiation skills, all integrated drive towards MBA-type of education for transferable skills.

Education Catalysts and Co-funding Model

EIT ICT Labs develops a number of joint European Catalysts which will deliver change and enhancement to the whole range of EIT ICT Labs education activities. They will affect educational content, course delivery and mobility of our students and teachers. Catalysts are supposed to directly support EIT quality criteria for EIT labeled education.

EIT ICT Labs education activities comprise (i) Master School, (ii) Doctoral School, (iii) Post-doctoral program, and (iv) Outreach towards the stakeholders outside the KIC. Most catalysts are focused on particular education activities such as the Master School or Doctoral School but can in some cases provide a common infrastructure to the both, such as mobility.

The currently developed set of catalysts are: E&I module (‘minor’), mobility program with focus on internships, co-location centre activities, summer & winter schools & camps, industrial doctoral training centre and finally accreditation and quality assurance system.

The development of the E&I module catalyst is done in collaboration with well established European Business Schools. The Co-location Centre activities will expose students to other stakeholders in EIT ICT Labs. Mobility/internships will provide hands-on experience by extensive embedded project work, with external project owners.



EIT ICT LABS DOCTORAL SCHOOL

Ph.D. students develop an innovative and entrepreneurial mindset

The primary goals of the EIT ICT Labs Doctoral School are to develop an innovation and entrepreneurial mindset among Ph.D. students and to set up the appropriate environment where young doctors may grow business projects founded on their thesis research. EIT ICT Labs

achieve these goals not by changing or perturbing the scientific quality of the Ph.D. degree but by empowering Ph.D. students in research with more innovation potential.

EIT ICT Labs Doctoral School will start by establishing a new organisation combining indus-

trial needs with Innovation & Entrepreneurship (I&E), built around two concepts: industrial doctoral training centres and integrating Ph.D. studies with MBA like studies in ICT innovation and entrepreneurship inspired by the British “doctoral training centres” (DTC) experience.



ACTIVITIES

Weaving I&E and Ph.D.

This activity aims to provide Ph.D. students with the required knowledge and skills on innovation and entrepreneurship. This will take the form of a joint (or double) degree where the Ph.D. student is also enrolled in a classical MBA or in a one-year master dedicated to innovation and entrepreneurship.

Business development experience in foreign Co-location Centre (CLC)

Using the infrastructure of EIT ICT Labs CLC's, setting up programmes with partners, business schools, technology parks and incubators, we support volunteering Ph.D. students and young doctors to grow a business development experience. They will gain an I&E-Ph.D. and their research will be used as a training example for following Ph.D. students.



Establishing Doctoral Training Centres (DTC)

Inspired by the British experience, a doctoral training centre may be roughly characterized as follows:

- A critical mass of 10 new Ph.D. students per year. Students will share their time with participating industry and co-located Doctoral Training Centre
- A theme or technology common to all the Ph.D. students so they share a common basis favouring cross-fertilization
- A commitment from supervisors to not only advise Ph.D. students but to participate and contribute

to the work done in the DTC for at least the duration of theses (3 to 4 year)

EXPECTED RESULTS

Due to the length of Ph.D. consolidated results cannot be seen before long. However the definition of an EIT labelled doctorate that embeds I&E will be shortly acquired. The first DTCs will be set up during 2012.

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EIT ICT Labs
Knowledge & Innovation Community





EIT ICT LABS MASTER SCHOOL

The EIT ICT Labs Master School will equip students, researchers and teachers with skills for creativity, risk taking and entrepreneurial capacity by catalyzing and renewing the key ICT educational programmes at Master's level.

STRUCTURE OF THE MASTER SCHOOL

The Master School to be launched in 2012 will have a uniform structure:

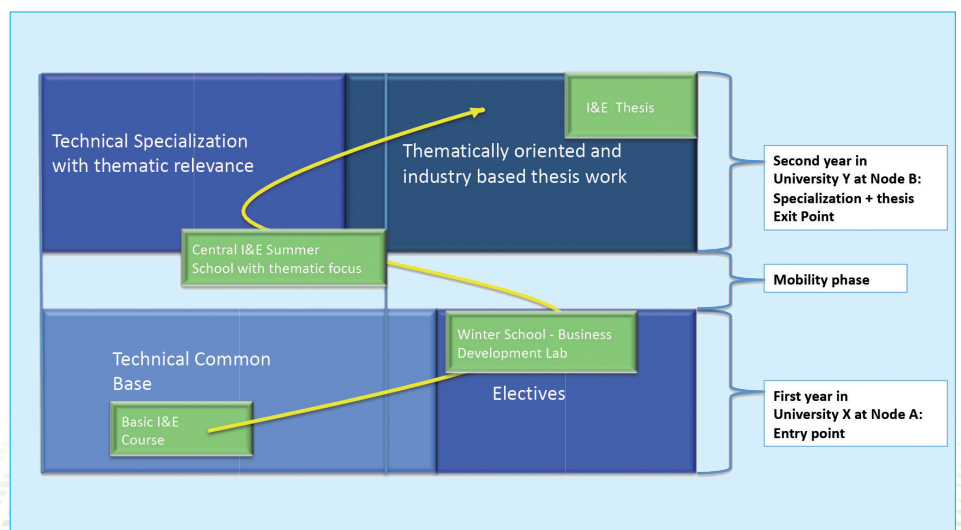
- a set of technical majors that include a common technical

competence base and a specialization/ theses part that has a thematic area focus (90 ECTS)

- a fully standardized minor in Innovation and Entrepreneurship (30 ECTS)

GUIDING PRINCIPLES

- Standardized entrepreneurship education integrated in technical programmes
- Broad stakeholder involvement in educational programmes
- Hands-on experience of innovation and entrepreneurship
- Targeted educational activities to breed entrepreneurial talent



MASTER IN ICT INNOVATION

Students will be enrolled in new local master programmes in “ICT innovation” in which they will be awarded an EIT ICT Labs labelled degree accompanied by an EIT ICT Labs diploma supplement documenting the EIT ICT Labs specific learning outcomes.

Normally students utilize the option for geographical mobility after the first year and are awarded a double degree and when possible an EIT ICT Labs joint degree. The whole Master School education will be held in English and all partner universities use ECTS units.

MAJOR SUBJECTS

The Master School consists of 7 technical majors:

- Human Computer Interaction and Design (HCID)
- Digital Media Technology (DMT)
- Service Design and Engineering (SDE)
- Internet Technology and Architecture (ITA)
- Distributed Systems and Services (DSS)
- Security and Privacy (SaP)
- Embedded Systems (ES)

The maximum amount of intake

is 30 students/major. The admission process and quality assurance of the studies for this whole group will be coordinated and tightly monitored by the EIT ICT Labs Master School Office.

SCHOLARSHIP PROGRAMME



A fee corresponding to the Erasmus Mundus programme fees will be required, but EIT ICT Labs also provides a generous scholarship programme to cover this fee.

In order to create the EIT ICT Labs identity among students, all students of the Master School are called to a common EIT ICT Labs Master School Kickoff and a joint Summer School.

RESULTS

The EIT ICT Labs Master School shall develop into a flagship education on advanced level eventually producing in the order of 500 graduates a year having both a cutting edge technical ICT specialization but also an Innovation and Entrepreneurship mindset.



Apart from establishing a high quality core Master School, the ambition is also to trigger local influence on participating universities, so that larger populations of master students include substantial elements of innovation and entrepreneurship in their studies scaling up our impact.

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EIT ICT Labs
Knowledge & Innovation Community

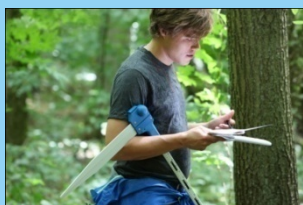
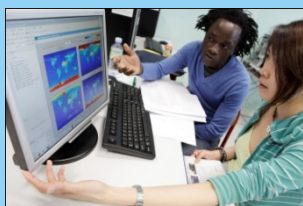


CLIMATE-KIC

EDUCATION

Climate-KIC aims to significantly accelerate the innovation required for a transformation to a low-carbon economy, and to ensure Europe benefits from new technologies, company growth and jobs.

To achieve this Climate-KIC education has designed and delivered a potent and innovative educational tool, the Climate Innovation Journey, which is already creating an active community of entrepreneurs and innovators. Students experience climate change science and innovation at first hand in its environmental, political, social and economic context and they work in multidisciplinary teams to develop their own innovation ideas for entry into a business plan competition. This successful approach to learning is the model for how students will learn in all our education programmes.



Climate-KIC Scholar Programme: New Masters courses combining scientific and business knowledge with climate innovation. Students are brought together for a Climate Innovation Journey and shared course modules to create a thriving multidisciplinary community. Student projects can be an internship, a research project, an innovation project, or a Greenhouse project.

Climate-KIC Fellow Programme: A Doctoral programme with PhD projects aligned to the Climate-KIC *Innovation & Pathfinder* programmes, incorporating the Climate Innovation Journey and other entrepreneurship education. Within the portfolio of projects there will be opportunities in multidisciplinary and/or multi-sectoral teams focussed on a climate innovation challenge with purposeful cross-national and/or cross-sectoral mobility elements

Climate-KIC Senior Fellow Course: Postdoctoral researchers working in Climate-KIC *Innovation & Pathfinder* projects will be equipped to recognise and grasp commercialisation opportunities that arise by taking part in the Climate Innovation Journey.

Climate-KIC Associate Course: The Climate Innovation Journey will be opened up to external and business participants who pay a fee to attend the course.

Climate-KIC Professional Courses: A range of professional development courses developed for Climate-KIC partners and other businesses.

Climate-KIC Open Source Courses: Open Source tools for networking and integration of participants from Climate-KIC education programmes within the Climate-KIC community. In addition Open Source educational content and tools from climate innovation activities are made available for use by the general public.

Climate-KIC Alumni: All successful graduates of Climate-KIC education programmes (Scholars, Fellows, Senior Fellows, Associates and Professionals) and Climate-KIC pioneers can network and engage through an active Alumni community.

KIC INNOENERGY

EDUCATION

KIC InnoEnergy SE is a European company fostering the knowledge triangle of education, research and business, to create a steep change in innovation and entrepreneurship. Our strategic objective is to be the leading engine for innovation and entrepreneurship in the field of sustainable energy. The Consortium consists of 30+ shareholders and additional 50+ partners - companies, research institutes, universities and business schools covering the whole energy mix. They are organised around six regional units, the Co-Location Centres (CC): Alps Valleys, Benelux, Germany, Iberia, Poland Plus and Sweden.

KIC InnoEnergy offers MSc programmes, a PhD school and a Postmaster. In each one of the MSc and PhD level programmes several tracks are available, in which the students will study in at least two different European countries. InnoEnergy also offers self-assessment learning material as well as life-long education for industry.



KIC InnoEnergy Master programmes are directed towards a completely new type of education in the energy field, mobilising the innovative and entrepreneurial spirit of the students. All programs emphasize the business aspects in various aspects, and, students receive the full energy knowledge in various ways, depending on the track. This will give the graduates a very deep understanding of the world's energy challenges paired with a significant insight into how energy businesses are created and into the industrial perspective of the energy side.

KIC InnoEnergy PhD School is for students who have technical excellence together with a drive for Business and Entrepreneurship (B&E). Students are taken into the PhD programme of one of the universities in the KIC InnoEnergy consortium, or into a double-degree or joint-degree arrangement with a pair of them. The students must then fulfill all the PhD requirements of that programme. The KIC InnoEnergy PhD School provides the further "added value" education and activities within B&E, and broadening of students into the other areas of InnoEnergy. The formal education within B&E will be given by important business and management schools as well as the partner universities.

Post master (PD Eng): This programme is directed towards people looking for a higher education with a stronger industrial orientation than a traditional PhD programme. During the two year programme, the students will have a direct industrial experience. The innovative and entrepreneurial aspects of energy technology play an important role in these studies.

