

EUROPEAN MASTER'S  
NETWORK  
**INDUSTRIAL  
ECOLOGY**

INNOVATED BY NATURE  
Made in Europe

Europe 2013

## **Industrial Ecology**

Industrial Ecology is an emerging interdisciplinary field that focuses on the twin goals of economic development and environmental quality, combining natural, technical and social discourse in a systems view at scale levels from the global to the local. Its core concept is the analogy between processes in nature (biosphere) and processes in society (techno-sphere). Industrial Ecology aims at a sustainable co-existence of the technosphere and the environment. Processes in nature, where cycles are closed and waste from one process is input for another, are models for socio-technological processes.

Industrial Ecology is in the heart of the EU needs of the "Europe 2020 strategy". Due to the current sustainability problems and imminent EU and global transitions in energy systems, food systems etc. there is a great need for Industrial Ecology trained persons that have a grasp of the complexities of the field of sustainable development. With a clear sustainable development focus, the discipline draws on the expertise of a range of disciplines which include economics, ecology, physics, environmental sciences, sociology, psychology, complex systems theory, etc. to address the current challenges of climate change, biodiversity loss, resource depletion, water shortages, social cohesion and achieving sustainability.

## **Industrial Ecology Education**

The European Industrial Ecology education has evolved since the mid-1990s with the first MSc program at the Norwegian University of Science and Technology (NTNU) in Norway. The discipline soon emerged in several other European universities in different countries as accredited degree programs or as minors and elective education modules integrated in other courses. With the advent of the European Erasmus Mundus Master program in Industrial Ecology (MIND) in 2011, the strategic cooperation of European IE education achieved a higher level. Current key academic/research programs of Industrial Ecology in Europe include

- Erasmus Mundus Master's Programme in Industrial Ecology (Graz, Leiden, Delft, Chalmers)
- Industrial Ecology MSc at Leiden University and TU Delft, the Netherlands
- Industrial Ecology MSc/PhD at NTNU, Norway
- Industrial Ecology MSc at Chalmers University of Technology, Sweden
- Sustainable Technology MSc at Royal Institute of Technology, Sweden
- Industrial Ecology and Sustainability PhD, Erasmus University Rotterdam, the Netherlands
- Energy Science and Technology MSc at ETH, Zurich, Switzerland

## **European Master's Network of Industrial Ecology**

In 2013, students from those Industrial Ecology study programs in different European countries collectively revealed the need to strengthen multilateral communication on both academic and professional development contents among universities. Bilateral connections have been built among some existing local student bodies such as SHIFT IndEcol Study Association (Leiden-Delft), Symbiosis (NTNU) and Chalmers Students for Sustainability (Chalmers). The European Erasmus Mundus MIND platform fostered further cohesion as MIND students study in different universities according to their mobility tracks. MIND students also contribute to the board of the ISIE student chapter and take leading roles in local student organizations. The idea of establishing a pan European student network of Industrial Ecology was hotly discussed during the MIND yearly gathering in August 2013, and further carried on for preparation. The concept of a pan-European network soon received enthusiastic welcomes from professors and students in different countries. Professor Henrikke Baumann is one of the key advisors and she kindly conveyed this idea to ISIE Governance team and business sectors in Sweden during the LCM conference held in Chalmers in 2013. As per the interest of students and recruiting companies, the network preparation team started the first endeavor on the Industrial Ecology Work Fair as the inauguration event of the formal network.

EMNIE is the establishing organization for the European Master's Network of Industrial Ecology who strives to inform business and development projects about sustainability principles. EMNIE forms links between students, academia and business in order to create a European-wide, multi-level industrial ecologist network contributing to the innovation-business-human resource interface. EMNIE aims at connecting Industrial Ecology students all over Europe and providing them with a unique platform for academic exchange, professional training, career development and employment opportunities by linking them to research and business.

The backbone of EMNIE is the European IE students. The students involved in EMNIE incorporate both the skills required for sustainability careers and an open-minded approach towards other cross-disciplinary and cross-cultural issues.

The EMNIE shall be a pure student self-governed organization registered at European Erasmus Mundus Education with fluid hosting by a sub-organization at one participating university each year. Local student organizations shall closely cooperate with EMNIE to organize annual pan-European wide events and invite students from partner universities to join. EMNIE is responsible for theme development, cohesion work and fund raising to fully support local organizations and events.

## **Governance and Administration**

The decision-making body of EMNIE is the Council, which meets twice a year, once for annual preparation meeting and the second time at the event. Each university, represented by its so-called "Local Group" sends no more than three student representatives to participate in the Council meeting. The members of the Executive Board of EMNIE are elected during the annual Council meeting. The Board is responsible for the management, coordination and administration of the Network. The actions of the Executive Board shall be the subject of supervision by the Council. The Council oversees the yearly transition, financial operation and project administration of the Executive Board. Council members also serve as communication focal points with their own Industrial Ecology programs and universities.

## **Potential Involved Universities**

Leiden University, the Netherlands  
Delft University of Technology, the Netherlands  
Chalmers University of Technology, Sweden  
Norwegian University of Science and Technology, Norway  
University of Graz, Austria (MIND coordination institute)  
Royal Institute of Technology, Sweden  
Erasmus University Rotterdam, the Netherlands

## **Potential Involved Student Organizations**

SHIFT Industrial Ecology Study Association (Leiden-Delft, the Netherlands)  
Symbiosis Industrial Ecology Students (NTNU, Norway)  
Chalmers Students for Sustainability (Chalmers, Sweden)  
Sustainable Engineering Everywhere KTH (KTH, Sweden)  
Sustainers Graz (KFU Graz, Austria)  
Erasmus Mundus MIND Network (MIND, EU)  
International Society of Industrial Ecology Student Chapter

## **Our Mission**

Our mission is fostering relations between Industrial Ecology students across Europe and supporting them in their personal and professional development. We achieve this by organizing a diverse portfolio of activities and events, and by providing a platform for communication and intercultural exchange as well as by linking business sectors to students to provide employment opportunities.

We promote the concept of EMNIE by establishing contacts between students, companies and institutions. Contributing to mutual understanding across Europe, our unique EMNIE spirit stands for bridging gaps and close loops, being sustainable and open minded and boosting innovation in society.

## **Our Members and Participants**

All current students, graduates or researchers of Industrial Ecology programs in European universities are our targeted members. EMNIE is dedicated to benefiting its members in education, academic and professional development aspects.

## **Our Goals**

- Representation of interests and image of Industrial Ecology Master's students in Europe
- Strengthen academic and cultural communication among European IE programs
- Support in curriculum design and joint education modules
- Support in cross boarder case study and excursion opportunities
- Linking business sectors with universities and organizing work fairs and employment events
- Linking alumni with current industrial ecology students without boarders
- Maintenance of contacts among industrial ecology students from different countries
- International relationship with ISIE and students outside of Europe

## **Our Future Focus of Activities**

- Industrial Ecology Work Fair
- Pan-European Industrial Ecology Student Un-conference / Gathering
- Selected Topics in Industrial Ecology Seminar / Intensive Course
- Industrial Symbiosis Excursion to Eco-Industrial Parks
- Pan-European Industrial Ecology Student Newsletter
- Eco Career Professional Development Events

## **Our Vision**

EMNIE is a strong network with a multicultural atmosphere.

EMNIE has Local Groups in each participating university in different European countries where Industrial Ecology studies are offered.

- The Local Groups fulfil the EMNIE internal requirements for Local Groups.
- EMNIE Local Groups are self-sustainable in their activity.
- EMNIE Board are active on a central level and cooperate with Local Groups in a proactive way.

EMNIE as a brand shall be widely known and considered as attractive among all stakeholders. Its main stakeholders are students, companies, universities and governmental institutions.

Through its operation EMNIE shall continually contribute to the personal and professional development of all member of the EMNIE. A wide portfolio of high-quality EMNIE activities with clearly defined concepts is offered all over Europe.

EMNIE is taking an active role to strengthen the relationships of Industrial Ecology study programs in Europe as well as their students, and to link high standard business and research opportunities with students.