

MIND

ERASMUS MUNDUS Master's Programme in Industrial Ecology

Duration: 2 years

Course description:

The Erasmus Mundus Master's Programme in Industrial Ecology is a two-year programme with 120 ECTS, offering a unique industrial ecology education for 15 Third-country (4,000 Euro participation costs per semester) and 10 EU students (2,000 Euro participation costs per semester) per edition. Those 25 students can study at two or three universities of the MIND consortium - representing seven universities - that consists of:

- University of Graz/Austria (co-ordinator)
- Asian Institute of Technology (Pathumthani/Thailand)
- Chalmers University of Technology (Gothenburg/Sweden)
- Delft University of Technology (The Netherlands)
- Rochester Institute of Technology (U.S./New York State)
- University Leiden (The Netherlands)
- Waseda University (Tokyo/Japan)

All these universities gained internationally acknowledged industrial ecology expertise in teaching and research.

Industrial ecology is an emerging interdisciplinary field combining natural, technical and social sciences 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). Evolution has resulted in a highly efficient use of materials and energy in biosphere systems: waste from one process is a resource for another. In today's society, resources are exploited, producing unusable waste streams and release of pollutants to soil, water, and air, leading to complex sustainability problems. Society might take lessons from the biosphere to solve these problems.

The objective of the MIND programme is to train students:

- to conduct industrial ecology analyses of such complex sustainability problems,
- to design industrial ecology solutions for these problems and
- to develop implementation strategies for those solutions identified.

Therefore, MIND is in the heart of the EU needs of the "Europe 2020 strategy", because 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.

The MIND programme combines the expertise and experience of prominent groups in the area of Industrial ecology research, within and outside the EU. MIND will be the first international master programme in industrial ecology worldwide, offering

- a joint degree (from Austrian and Swedish partners) and/or
- a double degree (from Dutch partners plus one or both of the other two EU partners)

depending on the students' choices. Moreover, MIND students are provided with the possibility to join a mobility semester in the U.S. (Rochester) or Asia (Pathumthani, Tokyo).

Each MIND partner provides a special focus on the subject, such as

- Asian perspective on and technology issues in industrial ecology (Asian Institute of Technology)
- Industrial ecology methods/tools, in particular modelling certain material systems (Delft, Leiden)
- Sustainable technical systems (Gothenburg)
- Human dimension of industrial ecology – decision-making models and sustainability assessment (Graz)
- Alternative energy and decision analysis (Rochester Institute of Technology)
- Industrial ecology methods based on input-output analysis, with special emphasis on waste and resource management (Tokyo)

Thus, the unique MIND programme offers crucial benefits for its students and outstanding possibilities for its scholars. Scholars from the four EU universities can visit the non-EU universities for guest lectures and vice

versa. This mutual exchange is fruitful for the further development of industrial ecology and supports networking and research.

Website: <http://www.emmind.eu>

Partners:

UNIVERSITY OF GRAZ, Austria (Co-ordinating Institution)
ASIAN INSTITUTE OF TECHNOLOGY, Thailand
CHALMERS UNIVERSITY OF TECHNOLOGY, Sweden
DELFT UNIVERSITY OF TECHNOLOGY, Netherlands
ROCHESTER INSTITUTE OF TECHNOLOGY, United States
UNIVERSITY LEIDEN, Netherlands
WASEDA UNIVERSITY, Japan

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