Curriculum 2020-2021

Teacher in charge: University Lecturer Janne Halme
Academic coordinator: University Lecturer Janne Halme

Degree: Master of Science (Technology) from Aalto University (120 ECTS), Master of Science or similar degree from partner university
Major: Advanced Materials for Innovation and Sustainability (SCI3083)
Minor: Innovation and Entrepreneurship (SCI3091)

Description

Advanced Materials for Innovation and Sustainability (AMIS) major will tackle the theme substitution of critical or toxic materials in products and for optimised performance, but will also cover material chain optimisation for end-of-life products and product and services design for the circular economy — all of which are central themes of the EIT RawMaterials. The primary focus of the adaptation is on metal and mineral raw materials; bio-base and polymer materials are covered in view of their substitution potential and other materials in the context of multi-material product recycling. In addition, AMIS includes a solid package of courses and project work in innovation and entrepreneurship.

The mobility of the students is an integrated part of the programme and during the two-year programme, the students will study at two of the consortium partner universities. The first year studies are taken either in Aalto, Grenoble INP or TU Darmstadt (two semester: autumn + spring). For the second year, the students move to one of these exit universities: Aalto, Grenoble INP, TU Darmstadt, Université de Liege or Université de Bordeaux 1. Upon completion of the programme, students will receive a double degree. The language of instruction of AMIS programme is English.

The AMIS programme will boost young professionals to become change agents with an entrepreneurship mindset able to safeguard the sustainability of EIT RawMaterials throughout the industrial and research landscape.

Learning outcomes in Aalto University

Second year learning outcomes

Building on the foundations laid in the 1st year, the students learn advanced topics in areas of their choice and continue to improve their research and hands-on skills. They will have in-depth understanding of some specialist topics in sustainable product design, nanomaterials and functional materials. Through tailored methodology and English language courses, the student will get introduced into project management, group dynamics, entrepreneurship and oral communications, in a setting that mimics a professional environment. The students are able to apply their knowledge and present technical information in written and spoken form.

University partners

- Grenoble Institut Polytechnique (GINP), France (Coordinator) http://www.grenoble-inp.fr/
- Technische Universität Darmstadt, Germany https://www.tu-darmstadt.de/
- Aalto University, Espoo, Finland http://www.aalto.fi/en/
- University of Bordeaux, France http://www.u-bordeaux.com/
- University of Liege, Belgium https://www.ulg.ac.be/cms/c_5000/en/home

Degree structure at Aalto University

- Advanced Materials for Innovation and Sustainability Major (55 ECTS)
- Master’s thesis (30 ECTS)
- Innovation and Entrepreneurship Minor (35 ECTS)