BioGov.net
Governance & Upskilling for a Stronger Bioeconomy

Case Studies in Bioeconomy education, training and skills development

Case study sample: CHEMARTS

Finland

CIVITTA

Funded by the European Union

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CHEMARTS

1 Abstract

CHEMARTS is a collaboration between two Aalto University schools: the School of Chemical Engineering and the School of Arts, Design and Architecture. The objective is to bring researchers and students together to create new concepts for the use of cellulose and other biomaterials. CHEMARTS consists of various activities, such as multidisciplinary study courses, summer projects for Master's students, and other research projects.

2 Target Groups

Students and teachers of Aalto University

3 Case Study Category

Art to elicit new ways of thinking and develop skills needed in bioeconomy education

4 Training Provider

Aalto University

5 Region

Espoo, Finland

6 Language

Finish, English

Funded by the European Union

7 Objectives of the education Format

N/A

8 Final objective of the education format

The final objective of the education format is to research the performance and design of advanced cellulosic materials for innovative uses.

9 Scope and context of the education format

CHEMARTS is a collaborative project that also includes teaching and learning. Currently, there are two educational initiatives:

- An introductory course "Design Meets Biomaterials" for BA and BSc students, which introduces the material itself and its applications. This is done via lectures and hands-on teamwork.
- A summer school for MA and MSc students, which contains a creative workshop where tutors are experts from different backgrounds.

10 Specific Skills and competencies addressed

In the "Design Meets Biomaterials" course, students are introduced to biomaterials and conduct corresponding experiments. They gain knowledge of bio-based materials and technologies, including creating, prototyping, and executing innovative ideas. The main focus of the summer school is on advanced and innovative uses of plant biomass sources and fractions that are not suitable for food production, while keeping in mind the life cycle and other sustainability aspects.

11 European Qualification Framework level/s

Level 7

12 Main benefit of the participant

No credential is given for the summer school nor the "Design Meets Biomaterials" course, but participation earns credit points.

13 Investment made

Citizens of a European Union (EU) or European Economic Area (EEA) member state or Switzerland do not pay tuition fees for degree studies. Participation in this course appears to be restricted to those who are currently enrolled in a degree programme.

14 Importance and impact

The CHEMARTS summer school has been organised since 2012 and accommodates 30 students (10 from CHEM, 10 from ARTS, and 10 from other Aalto University schools). A maximum of 80 students can be enrolled in the "Design Meets Biomaterials" course.

15 Relevance (of the format)

This is an example of collaboration between art and science for a tangible result and could be used as an example to derive insights for building training programmes. Additionally, several projects have grown out of the CHEMARTS initiative, bringing practical results from the application of science and arts.

16 Uniqueness and replicability in BioGov.net

This multidisciplinary approach, with a practically applicable result, seems to be unique for Finland, and there is no such curriculum in Estonia either.

Considering BioGov's objective of finding novel education models, the skills of education design, which also incorporate arts and design — another objective of BioGov — make this curriculum highly relevant.

17 Data sources

- **Online resources:** https://chemarts.aalto.fi/
- **Resource persons:**
- **Other sources, if any:**

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