

SMART BIOECONOMY

HAMK

HÄMEEN AMMATTIKORKEAKOULU
HÄME UNIVERSITY OF APPLIED SCIENCES

**Makers of
a sustainable
future**



The bioeconomy is the sector of the future





What is **bioeconomy**?

The bioeconomy utilises naturally occurring renewable materials and develops related innovations and technologies. In addition, services that utilise nature, such as nature tourism, are also part of the bioeconomy.

The bioeconomy promotes sustainable development and ecological solutions. Bio-based products can reduce the use of oil, coal and plastics, and thereby reduce the burden on the environment. Modern technologies in the smart bioeconomy will help anticipate future challenges and make the bioeconomy as sustainable as possible.

With the help of the smart bioeconomy, sustainable and sensible solutions for the future of society, the environment and the economy are possible.



A young woman with blonde hair tied back, wearing a blue uniform, is crouching in a barn. She is reaching out with her right hand to feed a brown and white cow. The cow is looking at her hand. In the background, there are metal railings and other cows in the barn.

www

Learn about our degree programmes: www.hamk.fi/biotalous



Watch a video about smart bioeconomy at HAMK!

Smart bioeconomy at **HAMK**

At HAMK, around a thousand students are studying to become tomorrow's experts in the bioeconomy and sustainable development. At the heart of these studies are intelligent bio- and circular economy solutions.

Our graduates include horticulturists in horticulture and the built environment, agrologists, forestry engineers, environmental designers and bio- and food technology engineers. Expertise in the production of renewable materials and the circular economy can be deepened with the degree programme in Bioeconomy Solutions, which utilises sector-specific learning environments.

Studying at HAMK is practical and involves a lot of teamwork. Cooperation in training includes Design Factory projects that bring together students, teachers and researchers. Company-oriented project work is also an integral part of the studies.

In addition to exchange studies, we also offer our students the opportunity to complete an internship abroad.



HAMK | Bio

Our research unit, HAMK Bio, conducts bioeconomy research and development projects based on the needs of companies. Our projects enable innovative experiments and produce research data for future needs.

www

www.hamk.fi/research/hamk-bio/?lang=en



We are part of the RUN-EU network (Regional University Network - European University), which aims to ensure economically, socially, culturally and ecologically sustainable development in the areas of operation of higher education institutions and among stakeholders.

We also organise various further education training concerning the bioeconomy. Also on offer are expert training and study courses as well as modules aimed at qualifications and tailored to the needs of companies.

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Studies, work and research on five campuses

We operate on five different campuses, where students get to work in actual working environments and with the right tools – the learning environment supports both learning and the integration of research into education.



The HÄMEENLINNA campus has its own laboratories for biotechnology and food technology education and uses the cutting edge technology in the field. Students can also take advantage of the biomasses produced on other campuses.



The FORSSA campus has a well-known circular economy business ecosystem that supports sustainable development studies. The campus also has a laboratory suitable for water analysis.



On the campus in LEPAA, students become experts in horticulture and the built environment. The parks and gardens on campus provide opportunities for observation, cultivation and research-based work. The Built Environment research group of the Bio Research Unit is also found in Lepaa.

EVO'S forestry and research campus offers Finland's only bachelor's degree in forestry engineering, with its own teaching forest. The forest area (approx. 1,800 hectares) allows for a natural transition from classroom instruction directly to field work and practical work.



The Agricultural and Rural Industries degree programme taught in MUSTIALA dates back to the 1840s. The Mustiala campus offers the opportunity to combine theory and practice on an organic farm, as well as the opportunity to conduct applied research.



Sinebrychoff is the oldest brewery in the Nordics. In spring 2021 our brewery became carbon neutral. Karhu, KOFF, Crowmoor, Battery, Coca-Cola and many other beverages are now made with 100% renewable energy. Brewing for a better today and tomorrow.

sinebrychoff.fi





Cooperation **benefits everyone**

We do a lot of development work on smart bioeconomy expertise together with companies and communities in the field. Both parties benefit from the cooperation: for students, the cooperation projects are a link to working life, and for companies, they offer the latest up-to-date information and provide a link to the educational community.

The forms of cooperation include different types of project work and research conducted as student work. The company or community can commission a thesis from us or offer the student an internship. In addition, we provide our students with jobs during school holidays.



New solutions through business cooperation

In business cooperation, students offer their skills to companies by, for example, producing solutions for the different development and research needs of companies. Student work is carried out as studies among a large group of students, as project-based group work or as thesis work through collaboration that combines education and research.

For example, in their biotechnology and food technology studies, students become acquainted with biogas production during the third year. They also get to learn about the treatment of biogas plants, from the reception of waste to the utilisation of final products, among other things. They visit a biogas plant, analyse plant samples in the laboratory, find out about process data and calculate balance sheets.

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**Interested in cooperation?
Read more about our services:**

www.hamk.fi/research/student-projects-for-companies/?lang=en



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Arsi Kujala
Head of Horticulture
Netled Ltd.





Our research areas:

- Value from biomasses
- Smart bioeconomy solutions
- Sustainable built environment
- Regional development.

www

Read more:

www.hamk.fi/research/hamk-bio/?lang=en

National and international project cooperation

Our research units are ready to support the operations and competitiveness of companies through sustainable bioeconomy. We coordinate and are involved in local, national and international projects. Through cooperation between our research units, we produce new solutions, which together allow us to increase the competitiveness of companies, often in surprising ways.

Many projects are currently underway, the themes of which include an intelligent value chain for bio-based

raw materials, industrial greeninnovations, the development of digital methods to promote coal farming, biogas and biochar as well as the waste recycling economy.

We also work internationally with our European and African partners. Through the RUN-EU network and the cooperation with our African partners, we offer international networking opportunities to those involved in the projects.

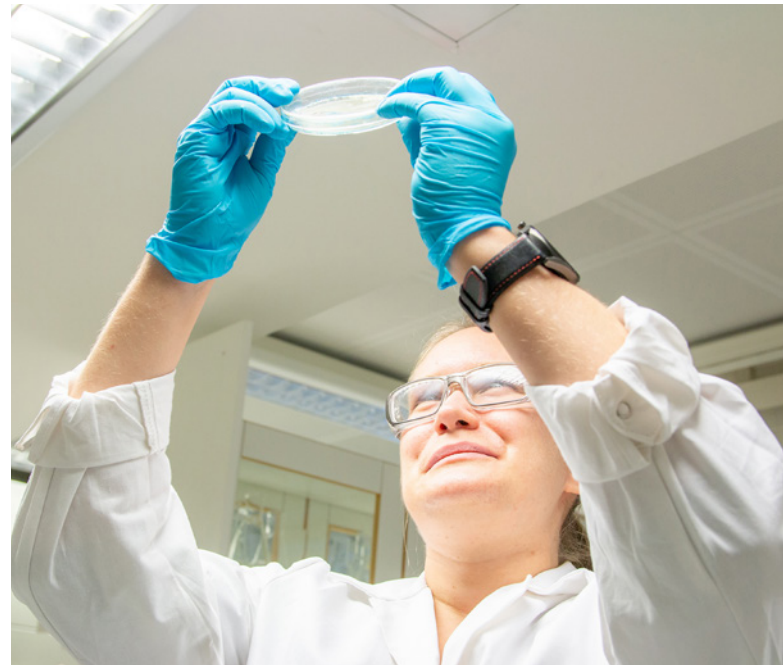
Case: Päre Skincare

Finnish skincare manufacturer Päre Skincare donates 10 cents from each product purchased to HAMK to support training, research and development projects. Päre, a manufacturer of cosmetics based on natural raw materials, aims to help the cosmetics industry use the surplus biomass from other industries more efficiently in the future.

www

Read more in our blog:

www.hamk.fi/2020/kosmetiikkayritys-pare-tukee-hamkia-lahjoituksilla-ja-ryhtyi-tutkimusyhteistyohon/



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THE HAMK BIO RESEARCH UNIT
www.hamk.fi/research/hamk-bio/?lang=en

Some info on the website is only in Finnish.
Please contact us, if you want further information!

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