HELMo Gramme trains versatile industrial engineers who are sought after in production, research and technological development, sales, management, quality management, etc. Working closely with companies is part of HELMo Gramme's DNA. Whether it is teaching or applied research, the engineering school welcomes the expertise of private players with open arms. A fruitful cooperation with the industrial leader John Cockerill is underway.

Recognised as an "Entrepreneurial School" by the Agency for Enterprise and Innovation (AEI), HELMo Gramme maintains close links with companies through various means: internships, research projects, partnerships within the framework of laboratories or projects (Siemens, ULg lab, Schreder, etc.), the Gramme Enterprise Forum (engineers from Gramme come to share their experience with the students of Block 3), the Job and Project Day, and the Advisory Board (made up of representatives from the professional world with the aim of carrying out a strategic reflection with the management).

In the field of training, HELMo Gramme is keen to involve companies in the students' end-of-study work and, more broadly, in defining its educational strategy. What is more, the industrial engineering curriculum should evolve to include Industry 4.0. This integration will be achieved through research. HELMo Gramme is already participating in one INTERREG project on this theme and a teacher has even been appointed to design 2 dedicated MOOCs.



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Research at HELMo Gramme

In the field of research, the CRIG, a cross-disciplinary research Centre, is active in five main lines of research: IT, Industry 4.0, Environment, Biotechnologies, entrepreneurship. Within this framework, HELMo Gramme pursues research projects on a European,

regional and internal scale. Funding from INTERREG, competitiveness clusters and the Walloon Region enable students to develop their own research strategy and the University College to hire researchers. The engineering school also offers companies applied research projects rooted in their reality. Whether they use their own equipment or that of partner companies, the objective is always the same: to meet their concrete needs in terms of innovation.

Industrial & Business Engineering

HELMo Gramme has forged close and long-term partnerships with leading companies located in the Liège basin. This is the case with John Cockerill: with its 6,000 employees and 22 target countries spread over 5 continents, the company offers companies, states and communities services and associated equipment for the energy, defence, industry, environment, transport and infrastructure sectors.

Four years ago John Cockerill sponsored the launch of a joint HEC-Gramme (ULiège and HELMo Gramme) master's degree: Industrial & Business Engineering (IBE). Every year, students from this programme join John Cockerill – proof if any were needed of the relevance of this training for the company, which is always looking for managerial and technical talent to take on the role of project managers.

Insects: highly efficient transformers of plant matter into animal protein

Within the framework of this master's degree, John Cockerill suggested to the students a most innovative exploratory research topic: insect ("Hermetia Illucens" or black soldier fly) rearing for the transformation of quasi-plant waste into animal proteins for fish farming and oviculture – with all the regulatory and societal issues that such a project entails.

A project for a semi-automatic insect rearing container was set up in 2020, but the SARS-CoV-2 crisis did not allow a proof of concept to be obtained. Between December 2020 and May 2021, funds were raised to install and equip a container and to relaunch the project. A collaboration was also initiated with Gembloux Agro-Bio Tech to determine the optimal conditions for insect reproduction.

Also in 2021, HELMo Gramme has appointed Sophie Pirard, Master Assistant, to follow up the project. The objective is now to obtain a proof of concept (prototype) for the fastest possible larval rearing process and to develop a realistic and profitable business model. In the medium term, the aim is to create a start-up. It must be said that such innovative

equipment is likely to attract business angels during subsequent fund-raising campaigns. Moreover, this innovation, once it has been brought into line with European standards, could help reduce the very strong pressure on fisheries resources and marine ecosystems.



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Engineering, economic and business skills

Although John Cockerill might not be a direct supplier of these future installations, it is already putting its engineering, economic and business skills at the service of this project. The company also has two particularly relevant instruments at its disposal in this context: Industrya, a €42 million investment fund with an incubator and accelerator for start-ups and scale-ups in the service of industrial transformation (in association with SFPI-FPIM, SRIW & W.IN.G, Noshaq and LRM), and John Cockerill Capital, which allows for a direct stake in a project.

But the challenge is above all educational for the company: it is a question of showing the students the technical, organisational, regulatory, environmental and societal problems of such a project… while at the same time making its professions attractive.

Training through research in the service of innovation: a winning trio!

New partnerships with companies or institutions

It comes as no surprise that HELMo Gramme enjoys international recognition thanks to its CTI (Commission des Titres d'Ingénieurs) approval, renewed in 2019 at its maximum level for all its courses. This recognition enables it to continue its development in its various fields of expertise and to increase its European visibility with a view to forging new partnerships with companies or institutions.

HELMo Gramme is currently seeking to publicise its activities by communicating more to the general public. The University College also strives to make its professors aware of the importance of research. A survey conducted internally has revealed that research is doubly attractive to them: as a means of acquiring new knowledge and as a career opportunity thanks to the partnership policy.

In fine, the initial positioning of HELMo Gramme, based on multi-skilled training, remains more relevant than ever to meet the expectations of companies in the industrial sector – expectations that are increasingly complex and interpenetrating. The University College is and will remain attentive to the needs of industry through clusters and competitiveness centres thanks to its offer of initial training, applied research and innovation vouchers in the life sciences, industry 4.0 and the circular economy.

Industrie 4.0: training for transition

As part of this project, HELMo Gramme is participating in the development of training courses for companies to help them make the transition to industry 4.0. The University College has joined forces with the company Job@Skills to set up a Walloon platform bringing together all the regional academic partners. The development of interactive continuing education tools and assistance in the creation of MOOCs are planned to support companies in this important phase of change in their activity.

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