

Food Technology: Minor Dairy Technology (30 ECTS)

Available in semester 2: February 2023-July 2023

LVT4DTVE

Minor title Dutch Zuiveltechnologie

Minor title English Dairy Technology

Study Programme Food Technology

| | Nr. | competentie | niveau |
|----------------------|-----|-------------|--------|
| Competence(s) | 1 | investigate | 2 |
| | 2 | experiment | 2 |
| | 3 | develop | 2 |

- Educational Goals**
- The student:
- logically reproduces effects of processing on milk components in dairy products and in products where dairy ingredients are used has knowledge about dairy technology and the industry related to milk components applies root cause analyses of technical and technological problems related to dairy processing is able to use dairy technology in similar processes outside the dairy industry, the “horizontal expansion”
 - has knowledge about new developments in production processes used in the dairy industry and is able to apply them
 - has knowledge about simulation programs that are used for designing and optimization of production processes and is able to apply them
 - is able to clarify how a fermentation process works, which factors (additions, starter culture, process conditions) are able to influence this process, in what way the process is influenced by these factors
 - can write a research proposal and report
 - has gained knowledge about dairy products and their sustainable and health and safety aspects
 - knows how to collect relevant information via interviews and literature research
 - is able to communicate research results to stake holders

Dutch agriculture is famous for the top quality dairy processes and products. If we want to continue this unique position we have to act. Current issues are e.g.: worldwide shortage of dairy process technologists and the need for even more healthy and sustainable dairy products. With this minor you can contribute to the development of high quality dairy products feeding our world in the coming decades.

Milk and dairy products are considered healthy nutrient-rich foods and they provide vitamins and ingredients we need. On the other hand dairy products can give rise to e.g. cow protein allergy and lactose intolerance problems. In this minor you will learn, in lectures, about milk components and their characteristics, nutritional value and dairy processes from factories all over the world.

Content/subject Assignments will be carried out in groups of students from a selection of subjects or a subject of your own choice. These assignments will be executed in the pilot plant or laboratory and can involve calculations, modelling and simulations, being aware of sustainability and health aspects.

The results from the assignment will be presented by the students in a meeting with all the students together and discussed to create an interactive learning environment.

In workshops you will learn about new developments in dairy technology with respect to preservation, separation, concentration, drying and mild processing. In a group you will design a production process applying new processes. They will use simulation programs to achieve an optimal design.

Part of the minor is also applied research to investigate the replacement of starter cultures by other (concentration of) starter cultures and adjusting process parameters. And you will do a literature study on specific health aspects of dairy products and communicate the findings.

Target audience* Students who have had two years of study in Food Technology, Bioprocess Engineering, Chemical Engineering or Process Engineering.

Added Value* Students learn about how to contribute to the development of high quality dairy products. Dutch dairy products are famous in the world. The knowledge and skills this minor provides them will help producers to continue to stand out.

Teaching method(s) and study load
lectures
self-study
practical work
workshops
applied research
presentations
writing a research proposal
reporting

In total: 30 x 28 hours

Rating scale

Exams /

Tests / Mark: (1-10, 0,1 increments)

Essays

Exam (1)

Name: assessment dairy technology
Subjects: basic knowledge, health and food, (non) fermented products, modelling and simulations
Test Form oral assessment: week 9 of the module
Weighing 8 EC's
Assessment Method individual

Exam (2)

Name: exam dairy technology
Subjects: health and food, (non) fermented products, modelling and simulations
Test Form written exam week 18 of the module
Weighing 8 EC's
Assessment Method individual

Literature and other necessities

Exam (3)

Name: project assignment dairy technology
Subjects: project plan, basic knowledge, health and food, (non)fermented products, modelling and simulations, practical work, sustainability
Test Form report : week 18 of the module
Weighing 10 EC's
Assessment Method group

Exam (4)

Name: presentation
Subjects: Presentation of the project assignment and professional attitude
Test Form presentation in week 18 of the module
Weighing 4 EC's
Assessment Method individual

Minor coordinator Koos.devries@hvhl.nl

Contact person for additional information* koos.devries@hvhl.nl

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| Language of tuition | <input checked="" type="checkbox"/> English <input type="checkbox"/> Nederlands |
| Study points (credits) | 30 |
| Form of instruction* | Fulltime |
| Available in the following study terms: | <input type="checkbox"/> Periode 1 en 2 <input checked="" type="checkbox"/> Periode 3 en 4 |
| Start application* | |
| Deadline application* | |
| Obligatory contact hours* | Approximately 20 hours per week |
| Admission conditions for VHL students | Students who have had two years of study in Food Technology, Bioprocess Engineering, Chemical Engineering or Process Engineering. |
| Admission conditions for external students* | Always contact with the minor coordinator in relation with the VHL-students requirements. |
| Application documents* | No |
| Maximum No. of participants / Waiting list | No |