

## Aquaculture Nutrition (I002794)

**Course size** *(nominal values; actual values may depend on programme)*

<b>Credits</b> 5.0	<b>Study time</b> 150 h	<b>Contact hrs</b>	50.0h
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**Course offerings in academic year 2022-2023**

A (semester 2)	English	Gent
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**Lecturers in academic year 2022-2023**

Fremaut, Dirk	LA22	staff member
Fievez, Veerle	LA22	lecturer-in-charge

**Offered in the following programmes in 2022-2023**

	<b>crdts</b>	<b>offering</b>
<a href="#">Master of Science in Aquaculture</a>	5	A
<a href="#">Exchange Programme in Bioscience Engineering: Agricultural Sciences (master's level)</a>	5	A

**Teaching languages**

English

**Keywords**

Aquaculture, nutrition, food, feed.

**Position of the course**

The course covers a number of general and specific issues related to (non-live) feed requirements, feed characteristics, feed production, feeding practices in an aquaculture context.

**Contents**

1. Aquaculture feed ingredients, feed analysis, chemical and nutritive characteristics of feed ingredients
2. Aquaculture feed production technology
3. Nutritional requirements of aquaculture organisms
4. Efficiency of use of feed by aquaculture organisms: feed conversion ratio; fish-in/fish-out-ratio
5. Sustainability in feed production; alternative feed ingredients: potentials and challenges
6. Aquaculture feed formulation based on linear programming
7. Excursion

**Initial competences**

General biology, chemistry, biochemistry and basic knowledge on aquaculture.

**Final competences**

- 1 The student is able to enumerate the main ingredients being used for aquaculture feeds, their advantages and disadvantages, and is able to critically evaluate tendencies within aquaculture nutrition with a focus on enhanced sustainability of rearing practices
- 2 The student is able to explain why an ingredient is suitable for the production of feeds in the aquatic environment.
- 3 The student understands which feed ingredients are necessary, and in which proportions, to compose a balanced artificial aquaculture diet depending on the species and the rearing context
- 4 The student is able to describe how the organism takes advantage of the feed ingredients and how feed formulation is related to intake and digestion by the organism.

- 5 The student is able to describe the various methods for feed analysis and can argue why they may be suitable in a scientific and/or an industrial production environment.
- 6 The student has insight into compound feed formulation based on linear programming

#### **Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

#### **Conditions for exam contract**

This course unit cannot be taken via an exam contract

#### **Teaching methods**

Demonstration, Guided self-study, Excursion, Lecture, Seminar: coached exercises

#### **Extra information on the teaching methods**

Theory lectures: lectures based on powerpoint presentations and videos.  
Exercises: virtual lab exercise on feed analysis; guided exercises on linear programming in feed formulation.  
Excursion: visit to feed production plant and to aquaculture facilities

#### **Learning materials and price**

Printout of the powerpoint presentation will be available during all classes.  
Estimated cost of the printouts: 20 euro (included in fee that is paid in the beginning of the academical year).

#### **References**

#### **Course content-related study coaching**

Lecturers are available during and after the classes.  
Further study guidance upon request by email or on appointment.

#### **Assessment moments**

end-of-term and continuous assessment

#### **Examination methods in case of periodic assessment during the first examination period**

Written examination

#### **Examination methods in case of periodic assessment during the second examination period**

Written examination

#### **Examination methods in case of permanent assessment**

Report, Participation

#### **Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

#### **Extra information on the examination methods**

Period aligned evaluation: theory: written closed book exam.  
Non-period aligned evaluation: exercises and excursion: participation and report.

#### **Calculation of the examination mark**

Out of 20:  
17 points attributed to written exam; 3 points attributed to the excursion report  
Students that do not attend the excursion without a valid reason, should retake the course the next academic year.  
Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.