

## Principles of Marine Fish Larviculture (I002854)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

<b>Course size</b>	<i>(nominal values; actual values may depend on programme)</i>		
<b>Credits</b> 3.0	<b>Study time</b> 90 h	<b>Contact hrs</b>	30.0 h

### Course offerings in academic year 2022-2023

A (semester 1)	English	Gent
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### Lecturers in academic year 2022-2023

Van Stappen, Gilbert	LA22	lecturer-in-charge
Bossier, Peter	LA22	co-lecturer

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

	crdts	offering
<a href="#">International Master of Science in Health Management in Aquaculture</a>	3	A
<a href="#">Master of Science in Aquaculture</a>	3	A
<a href="#">Exchange Programme in Bioscience Engineering: Agricultural Sciences (master's level)</a>	3	A

### Teaching languages

English

### Keywords

*Hatchery, fish larva, live food, larval nutrition, microdiet*

### Position of the course

The aim of this course is to give a general overview and principles of marine fish larviculture, focusing on nutritional and zootechnical aspects. Firstly, larval nutritional requirements in general are addressed. The different aquatic invertebrates that can be used as live food are highlighted, including their natural availability, general characteristics, culture techniques and fields of application in larviculture of mainly marine fish. Also developments in the field of microdiets are explained

### Contents

1. Introduction to marine fish species larviculture: principles, techniques, past and present successes and bottlenecks, perspectives and current developments with focus on nutrition; crucial role of live food
2. Artemia biology, ecology and taxonomy and strain study; production of cysts and biomass; commercial aspects and quality control; Artemia applications in aquaculture
3. Production techniques and applications of rotifers and other zooplankton organisms
4. Larviculture of marine fish species: general feeding strategies and zootechnical aspects

### Initial competences

*General biology, chemistry, biochemistry*

### Final competences

- 1 The student has general knowledge on general principles of marine fish larviculture, such as techniques used, current developments and future perspectives
- 2 The student has in-depth knowledge on the nutritional aspects of marine fish larviculture: nutritional requirements; feeding behaviour; live food versus artificial diets
- 3 The student has detailed knowledge on various aspects of different live food organisms (rotifers, Artemia, other zooplankton organisms) used in larviculture, such as their advantages and restrictions, availability, production techniques and fields of application.
- 4 The student has general knowledge on Artemia biology, ecology and taxonomy

### 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

Guided self-study, excursion, lecture, lecture: plenary exercises

#### Extra information on the teaching methods

*Theoretical lectures based on power point presentations and with plenary exercises, followed by discussion rounds.*

*One-day excursion to commercial fish production unit(s)*

#### Learning materials and price

*Printouts of the powerpoint presentation are available during all classes.*

*Estimated cost of the printouts: 10 euro (included in fee that is paid in the beginning of the academic year).*

*Pdf of the lectures and video clips of specific lecture contents are available through Ufora*

#### References

- *Manual on the Production and Use of Live Food for Aquaculture. FAO Fisheries Technical Paper no 361*
- *K. Hamre, M. Yúfera, I. Rønnestad, C. Boglione, L. Conceição, M. Izquierdo. 2013. Fish larval nutrition and feed formulation: knowledge gaps and bottlenecks for advances in larval rearing. Reviews in Aquaculture*  
<https://doi.org/10.1111/j.1753-5131.2012.01086.x>
- *L. Conceição, M. Yúfera, P. Makridis, S. Morais, M.T. Dinis. 2010. Live feeds for early stages of fish rearing*  
<https://doi.org/10.1111/j.1365-2109.2009.02242.x>

#### Course content-related study coaching

*Study guidance upon request by email or on appointment*

#### Evaluation methods

continuous assessment

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

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

#### Examination methods in case of permanent evaluation

Written examination, participation, assignment

#### Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

#### Extra information on the examination methods

*Non-period related evaluation: participation to plenary exercises; intermediate and final test and discussion sessions*

#### Calculation of the examination mark

*All essay questions contribute evenly to final score.*

*Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.*