

Curriculum

Blue Food PhD-course

This course aims to give students a broad insight into the seafood production system with a special focus on Swedish species and value chains. Both capture fisheries and aquaculture are considered, and the lectures will cover key steps of complete value chains. At the end of the course, the students should be able to explain fundamental concepts within the following topics:

- The most common methods for tank-/sea-based **cultivation of extractive species** (e.g. seaweed and mussels), including co-culture with other organisms at the same or different trophic levels (e.g. IMTA)
- The main systems for **farming of fish** on land, at sea and in lakes, as well as co-culture with other organisms at different trophic levels (e.g. IMTA)
- **Nutritional requirements** and development of **sustainable feeds** using **alternative** and renewable ingredients for organisms in fed aquaculture
- How **feed** for the most common aquacultured fish species such as salmon and marine species is produced, including the main steps of fish meal/fish oil and soy meal/soy oil production
- The most common methods for **capture fisheries**, including knowledge about main Swedish fishing areas, quota determination, species etc.
- How we can reach **diversification and increased utilization** of wild-caught and aquaculture species for food
- What are the key steps of the **seafood production chain** based on typical examples of value chains
- What are current uses, and possibilities for value-adding of **filleting co-products**
- **What are the main criteria determining seafood quality** from a (a) chemical/nutritional perspective, (b) sensorial perspective, (c) safety perspective; the latter including microbial safety as well as environmental contaminants
- **What do we know about consumer attitudes** towards seafood and how can we reach out and make an impact with scientifically-based information on seafood
- What are the most well-documented **health effects** of a diet containing seafood
- **How to perform sustainability analyses** of new and existing seafood value chains
- **Examples of how to integrate digitalisation and AI** in the seafood production system
- Key parts of the **legal framework** around seafood production
- Examples of how seafood production can be a **basis for tourism**
- Examples of Blue Food as a basis for **entrepreneurship**

Set-up: The course is registered at Chalmers, but the main part will take place during 1 week at Kristineberg research and innovation centre in Fiskebäckskil (week 10, 2022), with a study period after the course to prepare for the exam. The course is based on lectures, study visits to a seafood producing company and an aquaculture farm, as well as small project work in groups of 3-5 students.

Examination: A written exam will be done online 2-3 weeks after the course

Credits: 3 ECTS