GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Lab Facility Management (I003024)

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

Credits 4.0 **Study time 120 h**

Course offerings in academic year 2025-2026

A (semester 1) English Gent

Lecturers in academic year 2025-2026

Declercq, Annelies	LA22	lecturer-in-charge

Offered in the following programmes in 2025-2026	**crdts**	**offering**
Master of Science in Aquaculture	4	A

Teaching languages

English

Keywords

- Lab facility management
- Biosafety awareness
- Effective management practices
- Hands-on lab activities
- Water quality management
- Disease prevention and control
- Record-keeping in aquaculture
- Waste management
- Regulatory compliance in aquaculture practices

Position of the course

- This course serves as a foundational exploration into the intricacies of lab facility management practices within the field of aquaculture.
- Students will be introduced to essential concepts, including risk assessment and safety protocols, fostering an enhanced awareness of biosafety.
- The theoretical component emphasizes real-world examples and case studies, providing a comprehensive understanding of the practical applications of effective lab facility management practices.
- The practical part involves a detailed lab tour and hands-on demonstrations, facilitating a familiarization with routine tasks performed in the laboratory setting.
- Subsequently, students will then be involved in daily lab facility management.
- Special focus is given to water quality management, with students actively engaging in the monitoring and maintenance of optimal water quality parameters such as pH, temperature, dissolved oxygen, and salinity.
- Disease prevention and control strategies are actively learned and implemented, including practical experience with quarantine protocols for aquatic organisms.
- A significant aspect of the course involves hands-on practice in accurate record-keeping for each aquaculture system, documenting feeding schedules, water quality measurements, and health observations on a daily basis. Additionally, students will compile these records into a comprehensive daily activity report/hourly sheet report.
- Practical activities related to the care and maintenance of crustacean broodstock contribute to the hands-on experience gained in this course.
- Environmental sustainability is a key theme, with students participating in discussions and case studies focused on sustainable aquaculture practices. This includes exploration of waste management practices.

· A crucial component involves gaining familiarity with local and international regulations governing aquaculture practices, ensuring a commitment to ethical and legal standards in the field.

Contents

1. Theory:
- Introduction to lab facility management practices:
  - Introducing risk assessment and safety protocols to enhance biosafety awareness among students.
  - Exploring the fundamentals of lab facility management with real-world examples and case studies to emphasize the practical applications of effective management practices.

2. Practical part:
- Lab tour and practical demonstrations to familiarize with the routine tasks performed in the laboratory:
  - Providing an insightful lab tour accompanied by practical demonstrations of essential equipment and technologies used in water quality management and disease prevention.
  - Implementing hands-on activities allowing students to apply theoretical knowledge to real-world scenarios.
- Water quality management:
  - Hands-on monitoring and maintenance of optimal water quality parameters such as pH, temperature, dissolved oxygen, and salinity.
- Disease prevention and control:
  - Learning and actively implementing strategies for preventing and controlling diseases in aquatic organisms, including hands-on experience with quarantine protocols.
- Participation in trials and sample collection (if applicable)
- Record-keeping:
  - Students will practice accurate record-keeping through daily maintaining records for each aquaculture system. This includes documenting feeding schedules, water quality measurements, and health observations.
  - Students will also document the hours completed, daily tasks accomplished, and compile them into a daily activity report/hourly sheet report.
- Broodstock management of crustaceans:
  -
  - Engage in daily practical activities related to the care and maintenance of crustacean broodstock.
- Environmental sustainability:
  -
  - Participate in discussions and case studies exploring sustainable aquaculture practices, with a focus on minimizing environmental impact and promoting responsible resource management.
  -
  - Waste management practices
- Regulatory Compliance:
  -
  - Gain familiarity with local and international regulations governing aquaculture practices, ensuring adherence to ethical and legal standards.
- Each week, students will create a short video demonstrating a specific safety or handling procedure related to lab facility management they experienced that week. Using their own cell phones or cameras, they will capture these procedures in action. These videos will be shared with the class, allowing students to learn from each other's practical experiences. This activity not only reinforces the importance of safety protocols but also encourages students to develop their communication and presentation skills within the context of aquaculture facility management.

Initial competences

Knowledge in General biology, Chemistry, Biochemistry

Final competences

1 The student can demonstrate a thorough understanding of lab facility management practices, including:

· Mastery of risk assessment and safety protocols to enhance biosafety awareness.
· Application of theoretical knowledge to real-world situations through case studies and practical examples.

2 The student has hand-on practical proficiency:
· Water quality management: Competent hands-on monitoring and maintenance of optimal water quality parameters, including pH, temperature, dissolved oxygen, and salinity.

3 · Disease prevention and control: Active application of strategies for preventing and controlling diseases in aquatic organisms, demonstrated through hands-on experience with quarantine protocols.

4 · Record-keeping: Proficient practice of accurate record-keeping, demonstrated by daily maintenance of records for each aquaculture system. This includes meticulous documentation of feeding schedules, water quality measurements, and health observations.

5 · Broodstock management of crustaceans: Successful engagement in practical activities related to the care and maintenance of crustacean broodstock.

6 · Understanding on how environmental sustainability can be introduced into daily aquaculture facility management (e.g. also with view on waste management):

7 · The student has an understanding on ethical and legal standards in daily lab facility management.

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

Lecture, Practical

Extra information on the teaching methods

· Theoretical lectures, presented through interactive PowerPoint sessions and subsequent discussion rounds.
· Lab facility management training : practical classes involve students assisting in lab facility management in a rotating system with pairs of students.

Study material

None

References

Course content-related study coaching

Students will receive intensive guidance from lab experts

Assessment moments

continuous assessment

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

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

Examination methods in case of permanent assessment

Skills test, Participation

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

Evaluation methods for non-periodic assessment require students to successfully complete a practical exam test (requiring obtaining 16/20 for the biosafety lab test) before starting work in the labs.
Subsequent evaluation involves assessing participation, attendance, adherence to daily tasks, submission of daily care sheets during lab facility management training, and ongoing assessment.

In addition to this, record-keeping practices involve students maintaining accurate records for each aquaculture system on a daily basis. This includes documenting feeding schedules, water quality measurements, and health observations. Furthermore, students will document the hours completed, daily tasks accomplished, and compile this information into a daily activity report/hourly sheet report.
Taking an exam in the second exam period is not possible. Students who do not pass the continuous assessment must repeat the course in the subsequent academic year.

Calculation of the examination mark

The final score calculation for non-periodic assessment incorporates various components. Firstly, students must successfully complete a practical exam test, achieving a minimum score of 16/20 for the biosafety lab test, as a prerequisite before starting work in the labs.
Subsequent evaluation includes assessing participation, attendance, adherence to daily tasks, submission of daily care sheets during lab facility management training, videos prepared, and ongoing assessment.
Moreover, record-keeping practices involve students maintaining accurate records for each aquaculture system daily, documenting feeding schedules, water quality measurements, and health observations. Additionally, students are required to document the hours completed, daily tasks accomplished, and compile this information into a daily activity report/hourly sheet report.
Summarized, before initiating their work, students are mandated to pass a lab exam (obtain 16/20 or more), and the score achieved in this exam is factored into the overall evaluation. Lab work and reports collectively constitute 100% of the total score. Students opting out of non-period-aligned evaluations for this course unit may face potential failure, at the discretion of the examiner.