GHENT UNIVERSITY

Course Specifications

From the academic year 2021-2022 up to and including the academic year

Laboratory Animal Science (C004385)

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

Credits 9.0	**Study time 270 h**	**Contact hrs** 80.0h

Course offerings and teaching methods in academic year 2022-2023

A (Year)	English	Gent	practicum	5.0h
			online lecture	70.0h
			seminar: coached exercises	6.25h

Lecturers in academic year 2022-2023

Hermans, Katleen	DI05	lecturer-in-charge
Strubbe, Diederik	WE11	co-lecturer

Offered in the following programmes in 2022-2023	**crdts**	**offering**
Master of Science in Teaching in Science and Technology(main subject Biology)	9	A
Master of Science in Biology	9	A

Teaching languages

English

Keywords

laboratory animal science, ethics, animal welfare, experimental design, laboratory animal, experimental animal, animal experiment, alternatives, 3R principle

Position of the course

The goal of this course is to provide the student with enough knowledge concerning the use of laboratory animals, to be able to function as responsible for animal experiments. The student should learn to know about the specificities of different animal species, e.g. concerning morphology, physiology, requirements for nutrition, etc
This course is legally imposed by the Belgian government for professionals working with lab animals. The student should acknowledge the advantages and disadvantages of animal use and learn to optimize laboratory animal welfare, especially focusing on the 3 R's: Replacement, Reduction and Refinement of lab animal experiments. The student also acquires knowledge on legal implications and possible alternatives for laboratory animal use

Contents

In several short sessions, topics such as morphology, physiology, reproduction, immunology, nutrition and diseases of laboratory animals are discussed, as well as some general topics such as pharmacology, medical imaging and anaesthesia.
Other topics are ethics concerning animal use, legislation regarding experimental animals, housing and environmental enrichment, ethical methods of killing, animal models and alternatives, extrapolation of experimental data to man, experimental design and sample size determination etc.
During practical sessions, some handling and experimental techniques used in laboratory animals will be illustrated. Alternative methods (without the use of laboratory animals) are used as much as possible for these purposes. Students will also get exercise in experimental design, writing of non-technical summaries and ethical analysis

Initial competences

Having insight in chemical, genetic, molecular biological, microbiological and physiological processes as documented in the relevant courses of the bachelor

programs of Bachelor of Science in Biochemistry and biotechnology or Bachelor of Science in Biology.
Subscribing for this course is only possible after obtaining a bachelor degree in Science: Biochemistry and Biotechnology or Biology.
For students who are not currently enrolled in the UGent programs of Master of Science: biochemistry and biotechnology or Biology, subscription for this course only possible if they comply with the majority of final competencies of the bachelor of Science in biochemistry and biotechnology or Biology and after approval of the curriculum committee.

Final competences

1 The student has knowledge and insight in the specificities of laboratory animals, mainly the small rodents.
2 The student is aware of the fact that a thorough knowledge of an animal species is required before using this animal in a specific experiment.
3 The person directing animal experiments has knowledge and insight in the scientific aspects of animal experiments.
4 The person directing animal experiments has knowledge and insight in legal aspects of laboratory animal experimentation.
5 The person directing animal experiments has knowledge and insight in ethical aspects of laboratory animal experiments.
6 The responsible for these experiments understands the societal relevance and implications of the use of animals in experiments.
7 The person directing animal experiments is able to design an animal experiment in a responsible way.
8 The person directing animal experiments possesses knowledge concerning alternatives and where to find databases on alternative methods for animal use.
9 The person directing animal experiments is able to optimise lab animal welfare.
10 The person directing animal experiments is able to interpret the results obtained from such experiments in a critical and correct way.

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

Practicum, Online lecture, Seminar: coached exercises

Learning materials and price

The course material consists of video captures of lectures, lecture notes available on Ufora and one or two articles. During the lectures, further information sources such as books and internet sites, are mentioned.
Additional learning material and background information is freely available from the libraries and electronic databases by Ghent University

References

Course content-related study coaching

Assessment moments

end-of-term and continuous assessment

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

Written examination with multiple choice questions, Written examination with open questions

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

Written examination with multiple choice questions, Written examination with open questions

Examination methods in case of permanent assessment

Skills test

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

The examination method is a periodic evaluation (written exam with open

questions as well as multiple choice questions). The contents of the examination consist of the topics discussed during the lectures and the practical sessions. The questions will be given in English, but students are allowed to answer either in English or in Dutch.

Calculation of the examination mark

- periodic evaluation: 80%
- permanent evaluation: 20%