

## Laboratory Animal Science: Design and Ethics in Animal Experiments (I002873)

<b>Course size</b>	<i>(nominal values; actual values may depend on programme)</i>		
<b>Credits 3.0</b>	<b>Study time 84 h</b>	<b>Contact hrs</b>	26.0h

### Course offerings in academic year 2022-2023

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

Arts, Bas JM	WAGENI01	lecturer-in-charge
Bosch, Guido	WAGENI01	co-lecturer
Louisse, Jochem	WAGENI01	co-lecturer
Reimert, Inonge	WAGENI01	co-lecturer
Steenmans, Robertus JM	WAGENI01	co-lecturer
Terlouw, Arie	WAGENI01	co-lecturer
Thate, Fuus M	WAGENI01	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

### Teaching languages

English

### Keywords

*Use of laboratory animals, experiments, ethical judgement of animal experiments, limitations of alternative techniques, impact of environmental and procedure factors, importance of hygienic measures and barrier systems, statistics.*

### Position of the course

The applicant shall have acquired knowledge on the basic subjects of biology up to 18.75 credits (= 500 study hours) including at least 7.5 credits on anatomy/zoology and 7.5 credits on physiology. These terms of admission are in accordance with the formal requirements of the Dutch responsible authority.

### Contents

Note: This course has a maximum number of students. The deadline for registration is one week earlier than usual. See Academic Year. (<http://www.wur.nl/en/Education-Programmes/Current-Students/Agenda-Calendar-Academic-Year.htm>) -> Registration for Courses.

The objective of this course is to present basic facts and principles that are essential for the humane use and care of laboratory animals and for the quality of research. Technical and methodological aspects of the design and implementation of animal experiments will be discussed, with ethics, animal welfare and alternatives to the use of laboratory animals as central themes in this course. Only basic skills and expertise may be expected from this course, due to its restricted size and scope.

Dutch law requires that animal experimentation is carried out by properly trained people. For researchers this implies that in addition to this basic course they have to take an animal species specific course. After this you will be competent to design procedures and projects and to execute simple procedures on these animals (so called 'art 9 qualified'). The course has a maximum of 40 participants, including a maximum of 5 PhD or post doc students.

If the participant has met all legal requirements (knowledge in biology and physiology, and 100 % attendance in all lectures and practical's) and has successfully passed the exam at the end of the course, the participant will receive the basic course certificate.

## Initial competences

*Competence for admission to EM AquaH study program and first semester courses at UGent. Bachelor of Animal Sciences or Bachelor of Biology.*

## Final competences

- 1 After successful completion of this course students are expected to be able to:
  - demonstrate a critical and analytical attitude towards the scientific knowledge underlying Laboratory Animal Science related activities;
- 2 understand legislation concerning the use of laboratory animals;
- 3 understand basic principles, which guide towards the ethical judgment of animal experiments;
- 4 understand the possibilities and limitations of alternative techniques;
- 5 understand the requirements of laboratory animals with respect to housing, nutrition and care;
- 6 take note of the different methods for the collection of body fluids, and some other frequently used experimental techniques;
- 7 recognize pain as well as discomfort in laboratory animals and to define humane end points;
- 8 understand the most important methods of anesthesia, analgesia and euthanasia, which can be used in various laboratory animal species;
- 9 understand the possible impact of environmental and procedural factors on experimental results;
- 10 understand the importance of hygienic measures and barrier systems;
- 11 understand the impact of diseases in laboratory animals on the experimental approach and knows about possible health monitoring;
  
- 12 understand the specific demands that are necessary for a correct preparation and performance of animal experimental techniques and research;
  
- 13 understand the possibilities that statistics can offer to optimize the use of laboratory animals;
- 14 understand literature search methods, a.o. meta-analysis and synthesis of evidence, for example systematic reviews

## Conditions for credit contract

This course unit cannot be taken via a credit contract

## Conditions for exam contract

This course unit cannot be taken via an exam contract

## Teaching methods

Lecture: plenary exercises, Practicum, Demonstration, Self-reliant study activities

## Extra information on the teaching methods

- compulsory participation to lectures and practical class
  
- active participation to project learning and literature study

## Learning materials and price

A study guide, synopsis of lecturers, handouts of recent papers and handouts for laboratory class work.

The course textbook in Dutch (less expensive than English copy):

Zutphen, L.F.M. van, V. Baumans & F.OhL. (2009). Handboek Proefdierkunde. proefdieren, dierproeven, alternatieven en ethiek. Uitgeverij Elsevier gezondheidszorg, Maarssen. Vijfde druk. ISBN 9789035229815.

The course textbook in English:

Zutphen, L.F.M. van, Baumans, V. & Beynen, A.C. (2001). Principles of Laboratory Animal Science: A contribution to the humane use and care of animals and the quality of experimental results. Elsevier Science Publishers, Amsterdam, 2nd ed. revised. ISBN-13: 978-0444506122

## References

## Course content-related study coaching

*Teaching support by PhD students and teachers.*

## Assessment moments

end-of-term and continuous assessment

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

Participation, Written examination with multiple choice questions, Job performance assessment, Written examination with open questions, Assignment

**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**

Participation, Job performance assessment, Assignment

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

examination during the second examination period is possible

**Calculation of the examination mark**

The normal grades are between 0-10 and 6 ECTS achieved if passed (>5.5)