



Laboratory Animal Sciences (LAS), 5 higher education credits

Level: Research level

The general goal of the course is that the student shall obtain the knowledge and competence required by Swedish legislation and EU directive 2010/63/EU for persons planning and conducting animal experiments.

Learning outcomes

By the end of the course the students will be able to:

Knowledge and understanding

- list and describe the responsibilities of authorities, organizations and officials, involved in legislation, issuing permissions and supervision of animal experiments
- describe general laws and provisions regarding the use of animals in research, including housing, breeding, marking and record keeping
- describe potential health hazards for people working with laboratory animals
- give examples on differences in anatomy, biology and breeding of different experimental animals

Competence and skills

- apply ethical considerations built on the 3´Rs (Replacement, Reduction and Refinement) in the care and use of laboratory animals
- handle rodents with the animal welfare in focus
- Assess animal welfare, health and diseases in rodents and how to monitor animals during anaesthesia
- critical analysis of a scientific paper with ethical considerations built on the 3´Rs
- argue and defend a written ethical application

Judgment and approach

- determine experimental and humane endpoints for animal experiments
- design animal experiments using proper methods for a qualitative research

Contents

Swedish and EU legislation regarding work with laboratory animals
Alternative methods and animal protection organisations
Animal welfare and ethical aspects of using animals
Housing, breeding, including genetic manipulations, and nutrition of laboratory animals
Occupational health and safety
Comparative anatomy, biology, physiology and pathology
Health, behaviour, stress and diseases in laboratory animals
Experimental surgery, anaesthesia, analgesia and euthanasia
Practical training
Critical analysis of scientific papers and design of an animal studies

The course is divided into four modules:

Module A – Legislation and ethics

Module B – Animal biology and pathology

Module C – Practical training and examination

Module D – Seminars and examination

Module A and B comprise mainly video lectures and individual studies, and each module ends with written, web-based or oral exam. The students may start the course at any time, but the exam for module A and B cannot be taken earlier than one and two weeks, respectively, after start of the course.

Module C will be given at least once a month (during the semesters), more often if needed. To be qualified to module C, the student should have passed the exam on module A and B. After passing module C, the student will obtain a certificate allowing him/her to start working with animals.

Module D will be given at least twice per semester, more often if there are sufficient numbers of students.

Educational methods

Lectures, seminars, demonstrations, practical training and project work.

The educational method used is problem-based learning (PBL). PBL emphasizes the student's development of free, self-supporting lifelong learning ability as an instrument for critical inquiry. The students own queries and formulated problems form the basis of PBL. Important is also the student's ability to take responsibility for his/her own learning, and to seek and evaluate information and knowledge and to train co-operation and a flexible attitude to different views and ideas.

The course is given in such a way that both men's and women's experiences and knowledge are made visible and developed.

Examination (refers to Learning outcomes)

Oral and written examinations in accord with learning outcomes.

Students who have failed the course or part of the course twice are entitled to request another examiner for the following examination occasion. The request should be addressed to the Department.

Admissions

General requirements.

Admitted to education at research level (PhD studies) within the biomedical or biology disciplines.

Special Eligibility

Persons that have a documented education in LAS according FELASA C prior to January 1st 2013 or directive 2010/63/EU in another EU country can be admitted to module A, without having to take the other modules, to obtain a certificate allowing them to start working with laboratory animals in Sweden.

PhD students are admitted according to the following priority order:

1. PhD students registered at the Faculty of Health Sciences or PhD strongly connected to the Faculty of Health Sciences registered at other faculties within Linköping University
2. PhD students registered at other faculties within Linköping University
3. PhD students registered at other universities

Participation in the course of other students than above is only possible if there are fewer applicants from the above groups than students to be admitted.

Special requirements

The course should be of interest and relevance for students' thesis work that shall include animal experiments.

Grading

Pass or Fail.

Course Evaluation

Course evaluation will examine whether the course objectives are achieved.

Certificate

All student's will receive a course certificate issued by the course coordinator.

Required Reading

The course coordinator will provide a list of relevant literature before the course starts.

Other

If the course is withdrawn or is subject to major changes in this curriculum, normally three examinations will be offered within one year, one of them in close connection with the first opportunity.

The course is normally given in English.

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Organizer: Department of Medical and Health Sciences (IMH)

Registration number

LiU-2013-00133

Course code

8FO0069

Level

Research

Classification

Medicine

Valid from

Spring 2013

Revised from

(201x-xx-xx)

Approved by the Research and PhD studies Committee (FUN) 2013-01-28 on behalf of the Faculty Board of the Faculty of Health Sciences (FSM).