Laboratory Animal Sciences

Programme course

7.5 credits

Försöksdjursvetenskap

8MEA05

Valid from: 2018 Autumn semester

Determined by
The Board for First and Second Cycle Programmes at the Faculty of Health Sciences

Date determined
2012-12-07

Revision date
2014-10-06

Offered for the last time
Autumn semester 2022

Main field of study
Medical Biology

Course level
Second cycle

Advancement level
A1X

Course offered for
- Master's Programme in Experimental and Medical Biosciences

Specific information
The aim of the course is for the student to acquire basic knowledge in laboratory animal science. The course complies with Swedish legal requirements as well as the European Community's recommendations for the education and training of persons carrying out animal experiments. The course also comprises methods and model systems as alternatives to the use of laboratory animals. The course is elective semester one or three in the Master's Programme in Experimental and Medical Biosciences.

Entry requirements
The special eligibility requirement possession of the Degree of Bachelor of Sciences in a major subject area with relevance for biomedical sciences. This could include previous studies at faculties of medicine, technology/natural sciences, odontology or veterinary medicine. A major part of courses included in the Bachelor degree should be in subjects such as biochemistry, cell biology, molecular biology, genetics, gene technology, microbiology, physiology, immunology, histology, anatomy, and pathology.

Applicants must also have documented skills in English corresponding to the level of English in Swedish upper secondary education (English B). For applicants who have not studied in Swedish upper secondary education, skills in English are normally attested to by means of an international language test.

Intended learning outcomes

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

Knowledge and understanding

- List and describe the responsibilities of authorities and organizations, involved in legislation, issuing permissions and supervision of animal experiments
- Describe general laws and provisions regarding the use of animals in research
- Describe potential health hazards for people working with laboratory animals
- State and reflect on differences in anatomy, biology and breeding of different experimental animals

Competence and skills

- Apply ethical considerations built on the 3Rs (Replacement, Reduction and Refinement) in the care and use of laboratory animals
- Aandle rodents with the animal welfare in focus
- Assess animal welfare, health and diseases in rodents and how to monitor animals during anaesthesia

Judgement and approach

- Critically evaluate ethical applications and in conjunction with this be able to discuss experimental design, alternative methods and 3R-principle
- Discuss ethical and animal and personnel welfare issues, in conjunction with animal experiments

Course content

- Authorities, legislation and animal welfare organizations
- General laws and provisions regarding housing, breeding, and marking of animals for research, as well as record keeping
- Husbandry and environment
- Occupational health and safety
- Comparative anatomy, biology, physiology, breeding and nutrition
- Diseases and health monitoring
- Handling of animals for research and basic experimental techniques
- Analgesia, anesthesia and euthanasia
- Basic principles of surgery
- Alternative methods and the 3R-principle (refinement, replacement and reduction)
- Ethical aspects of animal experiments

Teaching and working methods

General: Linköping University Master's Programme in Experimental and Medical Biosciences applies student-centered learning among which Problem Based Learning (PBL) is one pedagogical philosophy and method. To prepare the students for future employment, practical and experimental work in laboratory settings are important parts of the programme in courses as well as in individual projects.
Specific: In this course lectures, tutorial groups, literature studies, seminars, demonstrations, and practical work related to handling of laboratory animals in different aspects are used.

Examination

Compulsory items
Active participation in the compulsory parts is necessary to pass the course, and assessment of them is carried out continuously. Compulsory parts in this course are: tutorial groups, seminars, and all practical elements (e.g visit to animal facility, handling of laboratory animals).

Examination
Individual written examination.
Written reports in conjunction with seminars (group assignments with individual assessment).

Scope of re-examination
The extent of a re–examination shall be similar to the regular examination.

Change of examiners
Students who have failed the course or part of the course twice are entitled to request another examiner for the following examination occasion, unless specific reasons are present.

Registration for examination
The procedure for registration should be stated prior to the commencement of each course. In other respects, regulations concerning examination and examiners are applied in accordance with Linköping University policy.

Grades

Three-grade scale, U, G, VG

Other information

The planning and implementation of a course must take its starting point in the wording of the course plan. The course evaluation included in each course must therefore take up the question how well the course agrees will the course plan.

The course is carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

If the course is withdrawn, or is subject to major changes, examinations according to this course plan are normally offered on a total of three occasions within one year, one of them in close connection to the first examination.

Department

Institutionen för klinisk och experimentell medicin