



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PVS0171 Digital tools and objective methods for motion research in animals, 3.0 credits

Syllabus approved

2022-01-13

Subjects

Animal Science

Education cycle

Third cycle

Grading scale

Pass / Failed

The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

English

Prior knowledge

Admitted to a postgraduate program in animal science, biology, veterinary medicine, engineering, veterinary nursing, or related subjects, or to a residency program in veterinary science.

Objective, including learning outcomes

On completion of the course, the student should be able to:

- Present an overview of different techniques for measuring motion in animals
- Discuss the pros and cons of measuring techniques for motion in animals and for their applicability for specific situations and species.
- Explain how different data can be analysed with different approaches.
- Develop, present and review an actual or fictive study design in the field of animal motion using digital techniques.

Content

Lectures (20h): The locomotor apparatus in animals, IMU-sensor technique, Motion Capture, Force plates, EMG, Computer Vision, Signal Processing, Machine Learning, Body modelling.

Group work (20h):

- Development of a suggestion for and preparation of the presentation of a study in the field
- Review a study proposal from another group

Seminar (16h): Presentations of group work and discussions.

Literature studies (20h)

Practical exercise in motion recording / own case recording (4h)

Requirements for examination

The course examination will be made through oral presentation of two group assignments:

1. the participants will present a study design in the field of animal motion using digital techniques. They will be asked to present an overview of possible techniques that can be used for their scientific question, discuss pros and cons and explain a suggestion for data analysis.
2. the participants will review and discuss another groups study design, choice of measuring methods and data analysis method.

Additional information

All participation will be made available online.

Responsible department

Department of Anatomy, Physiology and Biochemistry