



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PVS0169 Introduction to mechanics of soft materials, 4.0 credits

Syllabus approved

2021-09-27

Subjects

Veterinary Medicine/Food 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

Post graduate students or resident students with basic knowledge in food science, medical sciences and/or bioscience.

Objective, including learning outcomes

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

- Explain basic concepts in mechanics of soft materials, such as foods, tissues or

hydrogels

- Use rheometers and tensile testers for evaluation of mechanical properties of soft materials
- Assess experimental results from rheology and mechanical testing and put these into a scientific context

Content

The course will include lectures on the fundamentals of mechanics, mechanical testing, rheology as well as lectures on specific applications in food and bioscience. Further, the course will include practical exercises on instruments, including rheometer and mechanical tester. The practical exercises will cover the function and handling of the different instruments as well as how they are used to characterize the mechanical and rheological properties of various samples. The students are scheduled for lectures and supervised experimental sessions for two weeks, full time. As an assignment, each student will analyze their own samples or a set of samples provided by the course leaders. The results are to be handed in as a written report. The results will also be presented and discussed during a half-day workshop.

Requirements for examination

To pass the course the student must:

- Attend obligatory practical exercises and the workshop
- Collect experimental data, analyze these and write a report
- Put the experimental data into a scientific context

Additional information

The course is jointly organized by the Department of Molecular Sciences and the Department of Anatomy, Physiology and Biochemistry.

Maximum number of participants is 6 to ensure that the students get access to the experimental equipment and also to enable teaching in small groups should there be restrictions due to the pandemic. The course contains many practical sessions that are not suited for distance learning.

Responsible department

Department of Anatomy, Physiology and Biochemistry