

### Animal food science (LV0108) March 22 - June 2, 2023

For lectures and seminars, the academic quarter is applied, i.e., we begin quarter past full hour. Lectures and seminars will in most cases take place in room C212, BioCenter. In case of lab exercises, not to lose time academic quarter is NOT applied, please arrive at 9.00, 10.00, and 13.00 o'clock, respectively. Exercises take place in our food laboratory (MolSci, level 3 in BioCenter).

Some activities will take place in zoom, and this may also be an option if lecturers call in sick. Please use this zoom link if there is no other information in the schedule:

<https://slu-se.zoom.us/j/65529603224>

Password: AnimalFood

If

Date	Time	Activity	Subject and teacher	Room
<b>Week 12</b>				
Wed 22 March	10-12		Welcome and introduction. Grading criteria, course literature and schedule (ÅL, SAS)	C212
Thu 23 March	9-12.00	Lecture	Milk composition and raw milk quality (ÅL)	C212
	13-15.30	Lecture	Milk from minor dairy species (ÅL)	C212
	15.30-16	Assignment	Instructions to literature review in dairy science and technology (ÅL)	C212
Fri 24 March	9-12	Lecture	Milk proteins, minerals and lactose (ÅL)	C212
<b>Week 13</b>				
Mon 27 March	9-12	Exercise	Group 1. Cheesemaking (MJ)	MolSci
	13-16	Exercise	Group 2. Cheesemaking (MJ)	MolSci

Tue 28 March	9-12	Lecture (external)	Dairy technology (MP)	<a href="https://lu-se.zoom.us/j/63771614157">https://lu- se.zoom.us/j/63771614157</a>
	13- 16	Lecture	Rennet and acid induced milk coagulation. Enzymes	C212
Wed 29 March	9-12	Individual studies	Prepare for seminar and literature review	
	13- 15.15		<i>Utbildningsinformation (Studie- och karriärvägledningen, Utbildningsavdelningen, PSR)</i>	
Thu 30 March	07.30- 16.00	Study visit to Grådö mejeri, Hedemora		(ÅL)
Fri 31 March	9-12	Lecture	Principles of cheese manufacture (ÅL)	C212
	12.00- 12.30	Assignment	Group formation; literature reviews (ÅL)	C212

<b>Week 14</b>				
Mon 3 April		Individual studies	Prepare for seminar and literature review	
Tues 4 April	9-12	Exercise	Group 2. Milk coagulation (ÅL, MJ)	MolSci
	13-16	Exercise	Group 1. Milk coagulation (ÅL, MJ)	MolSci
Wed 5 April	9-11	Quizz and seminar	Cheese making (ÅL)	C212
	15-16		Åse in zoom	
Thu 6 April		Individual studies	Half-time seminar by PhD student Thomas Eliasson, Norrmejerier  Prepare for seminar and literature review	

<b>Fri 7 April</b>		<i>Easter Friday</i>		
<b>Week 15</b>				
<b>Mon 10 April</b>		<i>Easter Monday</i>		
Tue 11 April	9-12	Lecture	Milk fat. Composition, properties and products (ÅL)	C212
Wed 12 April	9-12	Lecture (in Canvas) + discussion (zoom)	9-11: Microstructures and textures in dairy products (ML) 11-12: Question time with Maud in zoom	Individual studies in Canvas 9-11 followed by discussion in zoom 11-12
Thu 13 April	10-12	Exercise	Group 1. Whipping properties of cream (ÅL)	MoSci
	13-15	Exercise	Group 2. Whipping properties of cream (ÅL)	MoSc
Fri 14 April	10-12	Quizz and seminar	Milk coagulation (ÅL)	C212
	13-16	Individual studies	Prepare for seminar and literature review	
	15-16		Åse in zoom	
<b>Friday 14 April is the last day to register in Ladok for the written examination in Dairy science and Technology April 28!</b>				

<b>Week 16</b>				
Mon 17 April	9-12	Lecture	Dairy microbiology and hygiene (ÅL)	Ratatosk, VHC
	13-16	Individual studies	Prepare for seminar and literature review	
Tue 18 April	10-12	Lecture (external)	Dairy from a nutrient and health sustainability perspective (AS)	C212

	13-15	Lecture (external)	Swedish dairy production as part of a sustainable future (VT)	C212
Wed 19 April	9-12	Individual studies	Prepare for seminar and literature review	
	15-16		Åse in zoom	
Thu 20 April	9-12.30	Lecture (external)	Starter cultures and production of fermented dairy products (FR)	C212
Fri 21 April	9-11	Quizz and seminar	Whipping properties of cream (ÅL)	C212
	11-13	Exercise	Cheese in theory and practice: together we taste your and other cheese types	C212
<b>Week 17</b>				
Mon 24 April	10-12	Seminar	Literature reviews in Dairy Science and Technology (ÅL, MJ)	C212
	13-16	Seminar	Literature reviews in Dairy Science and Technology (ÅL, MJ)	C212
Tue 25 April		Individual studies	Prepare for examination	
Wed 26 April		Individual studies	Prepare for examination	
	14-16		Åse in zoom	
Thu 27 April		Individual studies	Prepare for examination	
Fri 28 April	8-11.30	Written examination	Dairy Science and Technology	Examination hall N

<b>Week 18</b>				
Mon 1 May			<i>Labour Day</i>	
Tue 2 May	10-11		Introduction to meat and fish part. Instructions to literature review and internet lectures (SAS)	C212

	11-12	Lecture	History and purpose of meat (GZ)	C212
	13-16	Lecture	Meat quality. Carcass composition and classification. (JB)	C212
Wed 3 May	9-10	Lecture	Muscle morphology and physiology. (GZ)	C212
	10-12	Lecture	Conversion of muscle to meat. Tenderness (GZ)	C212
Thu 4 May	09-12	Study visit to Lövsta kött, AB	Bus leaves Ultuna at 9.00 from bus parking lot close to the Student Union building. Expected time back at Ultuna 12 o'clock. Please bring coffee/ fika if you want, there is nothing available at Lövsta (JB/SAS)	
	13-16	Lecture in Canvas	Individual studies: Advantages and problems with meat from entire male pigs (GZ)	C212
Fri 5 May	9-10	Seminar	Meat from entire male pigs (GZ)	C212
	10-12	Lecture	Meat composition and instrumental measurements. (SAS)	C212
	13-16	Lecture in Canvas	Aspects of meat quality	Individual studies
<b>Week 19</b>				
Mon 8 May	9-11	Lecture	Lipids in food of animal origin (SAS)	C212
	11-12	Exercise	Lipids in fish meat and egg (SAS) Formation of groups for literature reviews; meat science and fish quality (SAS)	C212
	13-16	Lecture	Poultry products (TBA)	C212
Tue 9 May	9-12	Exercise	Meat quality and instrumental measurements (SAS)	MoISci
	13-16	Exercise	Meat quality and instrumental measurements (SAS)	MoISci
Wed 10 May	9-12	Lecture in Canvas	Meat processing	Individual studies

Thu 11 May	10-12	Seminar	Meat quality and instrumental measurements (SAS)	C212
	13-15	Exercise	Meat processing and products: theory and practice (including tasting)	C212
Fri 12 May	9-12	Seminar	Sustainability and nutritional value of meat (AK, GZ, SAS)	C212
	13-15	Lecture	Introduction to food ethics (HR)	C212
<b>Week 20</b>				
Mon 15 May	9-12	Lecture	Fish quality and shellfish products (SAS)	
Tue 16 May	10-12	Lecture	Comparison of fish and mammalian muscle (SAS)	C 212
	13-14	Exercise	Fish quality (SAS)	MolSci
	14-15	Exercise	Fish quality (SAS)	MolSci
Wed 17 May	09-11	Exercise	Fish products (including tasting)	C212
	11-12	Seminar	Fish quality and products	C212
<b>Thu 18 May</b>	<i>Ascension Day</i>			
Fri 19 May		No teaching		
<b>Friday May 19 is the last day to register in Ladok for the written examination in Meat science and Fish Quality June 2!</b>				
<b>Week 21</b>				
Mon 22 May	10-12	Lecture	Food import and legislation (JJ)	C212
	13-15	Lecture	Egg and egg product quality (SAS)	C212
Tue 23 May	10-12	Lecture	Animal foods from a nutritional perspective (BS)	C212

	13-15	Lecture	General food law and food control (TBA)	C212
Wed 24 May	9-12		Prepare literature reviews	Individual studies
Thu 25 May	9-16		Prepare literature reviews	Individual studies
Fri 26 May	9-12		Prepare literature reviews	Individual studies
	13-16		<i>Thesis Day</i>	
<b>Week 22</b>				
Mon 29 May	9-12	Seminar	Literature reviews Meat Science and fish Quality (SAS, GZ)	C212
	13-16	Seminar	Literature reviews Meat Science and fish Quality (SAS, GZ)	C212
Tue 30 June	9-16		Prepare for examination	Individual studies
Wed 31 June	9-16		Prepare for examination	Individual studies
Thu 1 June	9-16		Prepare for examination	Individual studies
Fri 2 June	8-11.30	Written examination	Meat science and Fish Quality	Examination hall N
<i>Please -- fill out the course evaluation!!</i>				

**Types of activities during the course:**

1. In black: lectures. Lectures by specially invited, external teachers, are strongly recommended
2. In blue: study visits (strongly recommended)
3. In red: compulsory activities, including certain lectures, exercises and seminars
4. In green: independent work associated to course literature, study questions, follow-up of exercises, preparations of seminars, literature reviews and examinations.

**Course responsible:**Åse Lundh ([ase.lundh@slu.se](mailto:ase.lundh@slu.se))Sabine Sampels ([sabine.sampels@slu.se](mailto:sabine.sampels@slu.se))

**SLU lecturers:**

AK Anders Karlsson (Anders.H.Karlsson@slu.se)  
GZ Galia Zamaratskaia (galia.zamaratskaia@slu.se)  
HR Helena Röcklinsberg (Helena.Rocklinsberg@slu.se)  
JB Jakub Babol (jakub.babol@slu.se)  
MJ Monika Johansson (monika.johansson@slu.se)  
ML Maud Langton (maud.langton@slu.se)  
SAS Sabine Sampels (sabine.sampels@slu.se)  
ÅL Åse Lundh (ase.lundh@slu.se)

**Guest lecturers:**

AS Ann-Kristin Sundin; Lrf Dairy (ann-kristin.sundin@lrf.se)  
BS Birgitta Strandvik; Karolinska Institutet (birgitta.strandvik@ki.se)  
FR Fergal Rattray; Novozymes (fgra@novozymes.com)  
JJ Jenny Johansson; National Food Agency Sweden (jenny.johansson@slv.se)  
MP Marie Paulsson; Lund University (marie.paulsson@food.lth.se)  
VT Veronica Thuiller; Lrf Dairy ([victoria.thuillier@lrf.se](mailto:victoria.thuillier@lrf.se))