

## Meat Science and Technology (I002755)

**Cursusomvang** *(nominale waarden; effectieve waarden kunnen verschillen per opleiding)*

**Studiepunten 4.0** **Studietijd 120 u**

**Aanbodsessies en werkvormen in academiejaar 2024-2025**

A (semester 1)	Engels	Gent	hoorcollege	
			groepswerk	
			excursie	
			practicum	
			zelfstandig werk	0.0u

**Lesgevers in academiejaar 2024-2025**

De Smet, Stefaan	LA22	Verantwoordelijk lesgever
Devlieghere, Frank	LA23	Medelesgever
Eeckhout, Mia	LA23	Medelesgever

**Aangeboden in onderstaande opleidingen in 2024-2025**

	stptn	aanbodsessie
<a href="#">Bachelor of Science in Food Technology</a>	4	A
<a href="#">Master of Science in de biowetenschappen: voedingsindustrie</a>	4	A
<a href="#">Master of Science in Food Technology</a>	4	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: Food Science and Nutrition (niveau master-na-bachelor)</a>	4	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: landbouwkunde (niveau master-na-bachelor)</a>	4	A

**Onderwijstalen**

Engels

**Trefwoorden**

Meat science, meat processing, meat quality, muscle biochemistry, sustainable meat processing, additives, meat alternatives

**Situering**

The aim of this course is to provide basic knowledge in 1/ meat characteristics and postmortal muscle biochemistry and their relation with the quality and processing of meat; 2/ the different technologies, ingredients and additives involved in meat processing. Attention is further given towards sustainability items in the meat industry and the position of meat consumption and the meat industry in a broader societal context.

**Inhoud**

**Theory:**

1. The contemporary meat industry
  - 1.1. Meat in the societal context
  - 1.2. Towards a sustainable meat food chain
2. Meat science
  - 2.1. Introduction, definitions and composition
  - 2.2. Meat consumption and nutritional value
  - 2.3. Structure and biochemistry
  - 2.4. Muscle to meat conversion
  - 2.5. Sensorial and technological quality
  - 2.6. Slaughtering and cutting of meat
3. Meat technology: technological processes in the meat industry

- 3.1. Freezing of meat
- 3.2. Cooking of meat
- 3.3. Drying of meat
- 3.4. Salting and curing of meat
- 3.5. Emulsified meat products
- 3.6. Restructured meat products
- 3.7. Additives in meat products
- 3.8. Meat alternatives
- 4. Food safety aspects of meat and meat products

**Practice:**

- 1. Measuring the quality of fresh meat
- 2. Company visits: meat processing plant, slaughterhouse (might be replaced by guest lecture)
- 3. Paper reading and debates: discussion of hot topics based on recent publications (e.g. meat and health; sustainability of meat production and consumption)
- 4. Group work: presentations on the meat industry in an international context (e.g. the meat chain in different parts of the world) and discussion.

**Begincompetenties**

The student has basic knowledge of biology, microbiology and biochemistry.

**Eindcompetenties**

- 1 Have basic knowledge of meat characteristics, muscle biochemistry and meat technological processes.
- 2 Have insight in the postmortal muscle to meat conversion and the effects thereof on sensory and technological quality.
- 3 Have insight in methods and approaches to analyse, assess and guarantee the quality of meat.
- 4 Understand how the treatment and the processing techniques in the production of meat products influence the properties and the quality of the derived products.
- 5 Have insight in the safety aspects of meat products.
- 6 Have insight in the contemporary evolution of the meat industry within the societal context and the impact of sustainable development.

**Creditcontractvoorwaarde**

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk na gunstige beoordeling van de competenties

**Examencontractvoorwaarde**

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

**Didactische werkvormen**

Groepswerk, Excursie, Hoorcollege, Practicum, Zelfstandig werk

**Toelichtingen bij de didactische werkvormen**

The theory is given by university lecturers and guest speakers. The practical part comprises of a laboratory practical, an excursion to a meat processing company and slaughterhouse (might be replaced by guest lecture), paper reading and debates on a hot topic and presentations on recent developments in the meat industry within different regions of world, given by the students as part of their group work.

**Studiemateriaal**

Type: Syllabus

Naam: Notes Meat Science and Technology

Richtprijs: Gratis of betaald door opleiding

Optioneel: nee

Taal : Engels

Beschikbaar op Ufora : Ja

Bijkomende info: The notes consist of the syllabus and the slides presented during the lectures.

Type: Slides

Naam: Meat Science and Technology

Richtprijs: Gratis of betaald door opleiding

Optioneel: nee

Taal : Engels

Beschikbaar op Ufora : Ja

Type: Labomateriaal

Naam: Practicum meat quality

Richtprijs: Gratis of betaald door opleiding

Optioneel: nee

Type: Excursie

Naam: Company visits

Richtprijs: Gratis of betaald door opleiding

Optioneel: nee

### Referenties

Meat and meat products. 1995. Ed. A.H. Varnam and J.P. Sutherland. Chapman and Hall. ISBN 0-412-49560-0

Technology of meat and meat products. 1992. Ed. J.P. Girard. Ellis Horwood Limited. ISBN 0-13-904285-7

Lawrie's Meat Science, 6th edition. 1998. Ed. R.A. Lawrie. Woodhead Publishing Limited. ISBN 1-85573-395-1

### Vakinhoudelijke studiebegeleiding

For the theory and the practicals, contact hours are scheduled. During these contact hours the student can ask additional information or explanation to the lecturer. The practical exercises are guided by a teaching assistant. Additional support can be provided after making an appointment.

### Evaluatiemomenten

periodegebonden en niet-periodegebonden evaluatie

### Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode

Schriftelijke evaluatie

### Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode

Schriftelijke evaluatie

### Evaluatievormen bij niet-periodegebonden evaluatie

Participatie, Presentatie, Schriftelijke evaluatie, Werkstuk

### Tweede examenkans in geval van niet-periodegebonden evaluatie

Examen in de tweede examenperiode is enkel mogelijk in gewijzigde vorm

### Toelichtingen bij de evaluatievormen

#### **Period-aligned evaluation:**

The written examination consists of several questions that are mostly short open questions. Some questions aim at evaluating basic knowledge, whereas other questions aim at evaluating insight. One question is also included on the laboratory practical.

#### **Non-period aligned evaluation:**

Laboratory practical, paper debates and company visits: active participation is obligatory. Paper reading: written evaluation of the assignments. Group work on the meat chain: evaluation of the presentation.

### Eindscoreberekening

**Period-aligned evaluation:** 75% of the score

**Non-period-aligned evaluation:** 25% of the score

The student needs to participate to all assignments and exams that are part of the evaluation (period aligned and non-period aligned). Students who eschew period aligned and/or non-period aligned evaluations for this course unit, or when one obtains a score lower than 8/20 (not rounded up) on one of both parts (period aligned or non-period aligned evaluation), they will fail for this course unit. In that case the end score is set to 9/20 even when the calculation indicates a score of 10/20 or more.

