

Food Safety of Packaging Materials (I690010)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0 **Study time** 90 h **Contact hrs** 30.0h

Course offerings and teaching methods in academic year 2022-2023

A (Year)	English	Kortrijk	lecture	20.0h
			lecture: plenary exercises	5.0h
			guided self-study	5.0h

Lecturers in academic year 2022-2023

De Meulenaer, Bruno	LA23	lecturer-in-charge
Vermeulen, An	LA23	co-lecturer

Offered in the following programmes in 2022-2023

Master of Science in Sustainable Food Packaging	crdts	offering
	3	A

Teaching languages

English

Keywords

Food contact materials, migration, legislation, microplastics

Position of the course

Food contact materials and in particular food packaging materials are not inert. Due to their interaction with the food matrix, substances are migrating from the contact material to the food. This may affect food safety and the sensorial quality of food. In this course the factors impacting the transfer of substances from the contact material to the food will be presented. Various types of materials will be considered: plastics, elastomers and rubbers, metals, glass, paper and board. Due to these mass transfer phenomena, detailed legislative frameworks are developed in order to guarantee food safety. The legislative framework of the EU will be outlined, next to the US FDA legislation. The methodological approaches to evaluate the transfer of (volatile and non-volatile) substances from food contact materials, will be covered. These include chemical analytical approaches and the mathematical prediction of the migration from plastic food contact materials with the use of dedicated software.

Contents

1. Mechanistic aspects of material transfer from food contact materials to foods
2. Legislative and normative aspects of migration from food contact materials
3. Methodological aspects in the evaluation of the transfer of substances from food contact materials

Initial competences

This course requires knowledge about the various types of materials contacting food, as outlined for instance in the course Food packaging systems: materials, machines and packaging conditions.

Final competences

- 1 To acquire profound knowledge and insights in the material transfer from food contact materials to foods.
- 2 To evaluate critically the material transfer from food contact materials in a food safety and legislative context (e.g. interpreting and drafting a Declaration of Compliance).

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture: plenary exercises, Guided self-study, Lecture

Extra information on the teaching methods

Lectures (can be organised online): (20 hrs)

Plenary exercises are exercises with simulation software (cannot be organised online). (5 hrs)

Guided self-study (can be organised online): Students will carry out a case with respect to the specifications of a Declaration of Compliance (DOC) (5 hrs)

Learning materials and price

Migration from food contact materials. L.L. Katan, Springer, ISBN 978-1-4613-1225-3

References

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https://ec.europa.eu/food/safety/chemical_safety/food_contact_materials_en

<https://www.efsa.europa.eu/en/applications/foodcontactmaterials>

Course content-related study coaching

Before and after the lectures and exercises, the student can ask the teacher or assistant for additional information or explanations. The teacher and assistant can also be contacted by e-mail.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written examination, Oral examination, Open book examination

Examination methods in case of periodic assessment during the second examination period

Written examination, Oral examination, Open book examination

Examination methods in case of permanent assessment

Participation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

The written exam comprises an open book and closed book part and will be discussed orally.

The assignments include a report on the DOC and the migration simulation exercises.

The participation includes active participation and significant and valuable contribution to the plenary discussion of the case studies.

Calculation of the examination mark

Theory: (67%): written exam

Practice: (33%): scored on the report of the assignments.

The student needs to participate in 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 nonperiod 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 point of 10/20 or more.