

## Food Safety of Packaging Materials (I690010)

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

**Credits 3.0** **Study time 90 h**

**Course offerings and teaching methods in academic year 2024-2025**

A (Year)	English	Kortrijk	lecture independent work
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**Lecturers in academic year 2024-2025**

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

**Offered in the following programmes in 2024-2025**

	crdts	offering
<a href="#">Master of Science in Sustainable Food Packaging</a>	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, Independent work

#### **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)

#### **Study material**

Type: Slides

Name: Food Safety of Packaging Materials

Indicative price: Free or paid by faculty

Optional: no

Language : English

Number of Slides : 0

Available on Ufora : Yes

Online Available : Yes

Available in the Library : No

Available through Student Association : No

#### **References**

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

[https://ec.europa.eu/food/safety/chemical\\_safety/food\\_contact\\_materials\\_en](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**

Oral assessment, Written assessment

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

Oral assessment, Written assessment

#### **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.