



*Course syllabus*

# Förpackningsteknik och utveckling Packaging Technology and Development

**MTTN40, 7,5 credits, A (Second Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED I

**Date of Decision:** 2023-04-14

## General Information

**Main field:** Food Product and Packaging Development.

**Main field:** Food Systems.

**Compulsory for:** MFIPDES2

**Elective Compulsory for:** MLOG2, MLSA1

**Elective for:** B4, I4-lf, K4, M4-lp, M4-pu, MD4

**Language of instruction:** The course will be given in English

## Aim

The course provides theoretical and practical knowledge in packaging development and innovation, and deals with the significance of packaging in society. Upon course completion, you will understand how to run a packaging development project with others, and how packaging affects sustainable development in society. You will also have the experience of a practical project with a relevant industry partner.

## Learning outcomes

*Knowledge and understanding*

For a passing grade the student must

- Understand and explain the basic functions of packaging
- Identify product requirements, market requirements and environmental requirements for packaging
- Describe and understand the packaging development process
- Describe the most important packaging materials' characteristics (plastic, glass, fiber and metal)

- Describe the function of packaging in different parts of the supply chain
- Describe and understand the role of packaging for sustainable development both with regard to the choice of packaging material and the influence of the packaging system on sustainability in the supply chain.

#### *Competences and skills*

For a passing grade the student must

- Evaluate and explain packaging based on product requirements, customer requirements, and requirements for a sustainable society.
- Demonstrate the ability to organize and conduct a packaging development project
- Develop and construct packaging prototypes
- Use models and tools for understanding consumers
- Independently carry out a packaging development project in cooperation with industry
- Propose and evaluate different packaging materials in the design of packaging prototypes
- Assess and rank different packaging solutions based on product requirements, customer requirements and sustainability aspects
- Present, both orally and in writing, the most appropriate packaging solution based on the assigned practice case

#### *Judgement and approach*

For a passing grade the student must

- Account for and present a prototype, poster and reports on the packaging prototype developed in the project
- Cooperate in multidisciplinary teams and evaluate the knowledge and perspectives from different areas of expertise in the project
- Cooperate with industry in a packaging development project, demonstrate understanding about, and assess the business community's view of packaging development
- Evaluate and provide feedback to other student groups concerning their work with prototype development

## Contents

The course is built on project-based learning in which the foremost course component is to implement an industry-assigned packaging development project. The project is carried out in a group and follows a research approach in which theories on packaging development, consumer insights, and sustainable development are converted into practical application in the project. You will receive feedback during the project from your supervisor and in peer-review seminars. Support in the project is provided through lectures and study visits with researchers from the department and representatives from industry. The lectures present theory on the development of packaging systems for various applications, on different packing materials, on market and consumer aspects, as well as aspects of sustainable development of packaging. Guest lectures and study visits provide good insights into how different companies work with packaging development and production.

## Examination details

**Grading scale:** TH - (U,3,4,5) - (Fail, Three, Four, Five)

**Assessment:** Students will be graded group-wise on the project that is presented in reports, prototype and poster. Individual examination will be conducted in the form of written assignments and a written exam. The final grade is based both on individual and group examination.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a

form of examination equivalent to that of a student without a disability.

### **Parts**

**Code:** 0120. **Name:** Project.

**Credits:** 4,5. **Grading scale:** UG. **Assessment:** Students will be assessed group-wise on the project that is presented in a report, prototype and poster.

**Code:** 0220. **Name:** Written Exam.

**Credits:** 3. **Grading scale:** UG. **Assessment:** Individual examination will be conducted in the form of a written exam and written individual assignments.

## **Admission**

### **Admission requirements:**

- At least 135 credits of an engineering programme

**The number of participants is limited to:** 100

**Selection:** Completed university credits within the programme. Priority is given to students enrolled on programmes that include the course in their curriculum.

## **Reading list**

- Material distributed at lectures and seminars.
- Current research literature: scientific journals as well as excerpts from theses and books in the field of packaging technology and development.
- Course literature will be accessible on Canvas (student webportal).

## **Contact and other information**

**Course coordinator:** Lars Palm, [lars.palm@plog.lth.se](mailto:lars.palm@plog.lth.se)

**Course homepage:** <https://www.plog.lth.se/education/packaging-technology-and-development/>