



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Food packaging systems

### Course

Field of study

Year/Semester

Construction and Exploitation of Means of Transport

1/1

Area of study (specialization)

Profile of study

Food Industry Machines and Refrigeration

general academic

Level of study

Course offered in

Second-cycle studies

Polish

Form of study

Requirements

full-time

elective

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

30

0

0

Tutorials

Projects/seminars

0

0

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

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Faculty of Civil and Transport Engineering

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### Prerequisites

Knowledge:

1. Basic knowledge of the physicochemical properties of food products;
2. Knowledge of modern technological solutions for food production;
3. Knowledge of typical construction materials and methods of their shaping and processing;

Skills:

1. Can design a simple technological process for the production of basic food products;



2. Can select the appropriate elements of the production line in food processing / production processes

Social competencies:

1. Understands the role of the engineer in the food production process;
2. Understands the interaction aspect between packaging materials and the environment

### Course objective

To acquaint students with the applicable terminology and criteria for the division of packaging. The functions and purpose of packaging in the context of application in the food industry, both in terms of production, transport and storage. Packaging devices as elements of production lines in the food industry, direct use of packaging in various branches of this industry

### Course-related learning outcomes

Knowledge

1. Has extended knowledge of modern construction materials such as synthetic materials, non-metallic natural materials (wood, glass, paper).
2. Has extended knowledge of the life cycle of machines, principles of operation of working machines and destructive processes occurring during the operation of production lines in the food industry.
3. Has basic knowledge of selected technologies of machine work in the food industry.
4. Has extended knowledge of the standards for packaging industry machines in the field of calculation and testing of machines, safety, environmental protection and mechanical interface.

Skills

1. Can correctly select the optimal material and technology of its processing for typical packaging, taking into account the latest achievements in material engineering.
2. He can program the technological process of producing packaging for the food industry.
3. Can design a technology of exploitation of a selected machine operating on a production line in the food industry.
4. Can advise on the selection of machines for the technological line within a group of machines dedicated to the food industry.

Social competences

1. Understands the need for lifelong learning; can inspire and organize the learning process of other people
2. Is aware of the importance and understands the non-technical aspects and effects of a mechanical engineer's activity and its impact on the environment, as well as being responsible for the decisions made.
3. Can interact in a group taking different roles in it.



4. Can define priorities for the implementation of the undertaken task related to the packaging industry.
5. Can think and act in an entrepreneurial way in the context of the use of packaging in the food industry.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

final exam

### Programme content

Definition and classification of packaging. Protection, information, logistic and marketing functions of packaging. Regulations on the properties of packaging materials and requirements for information provided on food packaging or labels. Glass, metal, paper and plastic packaging. Quality changes during food storage. Food preservation. Transport packaging and loading units. Food packaging certification. Food packaging systems. Selected food products and examples of their packaging. Ecological aspects of packaging. New trends in food packaging.

### Teaching methods

lecture with a multimedia presentation

### Bibliography

Basic

1. Opakowania żywności, Praca zbiorowa, Agro Food Technology, Czeladź 1998
2. Korzeniowski A., Skrzypek M., Szyszka G., Opakowania w systemach logistycznych, Biblioteka Logistyka, Poznań 2001
3. Korzeniowski A., Skrzypek M., Ekologistyka zużytych opakowań, Biblioteka Logistyka, Poznań 2001

Additional

### Breakdown of average student's workload

	Hours	ECTS
Total workload	55	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	25	1,0

<sup>1</sup> delete or add other activities as appropriate