



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Packaging [N2MiBP1-PCh>Opak]

### Course

Field of study

Mechanical and Automotive Engineering

Year/Semester

1/1

Area of study (specialization)

Refrigerated Vehicles

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

9

Laboratory classes

0

Other

0

Tutorials

9

Projects/seminars

0

### Number of credit points

2,00

### Coordinators

dr hab. inż. Łukasz Wojciechowski prof. PP  
lukasz.wojciechowski@put.poznan.pl

### Lecturers

### 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 products food; 2. Can select appropriate elements of the production line in the processing / production processes food; Social competence: 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. Features and purpose of packaging in the context of application in the food industry in terms of both production as well as transport and storage. Packaging devices as elements of production lines in food industry and direct use of packaging in various branches of this industry.

### Course-related learning outcomes

Knowledge:

Has basic knowledge about selected technologies of machine works in agriculture, construction, transport, food industry, etc.

Has extended knowledge of the standards for working machines in the field of methods of calculating and testing machines, safety, including road safety, environmental protection as well as mechanical and electrical interface.

He knows the main development trends in the field of mechanical engineering.

#### Skills:

He can estimate the potential threats to the environment and people from the designed working machine and vehicle from a selected group.

Is able to use the acquired knowledge in the field of thermodynamics and fluid mechanics to simulate thermodynamic processes in technological systems of machines, using specialized computer programs.

He can design the technology of exploitation of a selected machine with a high degree of complexity.

#### Social competences:

It is ready to fulfill social obligations, inspire and organize activities for the benefit of the social environment.

It is ready to initiate actions for the public interest.

Is willing to think and act in an entrepreneurial manner.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Credit: written test

### Programme content

Definition and classification of packaging. Protection, information, logistic and marketing functions packaging. Packaging material properties regulations and information requirements given on food packaging or labels. Glass, metal and plastic packaging stationery, plastic. Quality changes during food storage. Fixation food. Transport packaging and loading units. Food packaging certification. Systems food packing. Selected food products and examples of their packaging. Ecological aspects packaging. New trends in food packaging.

### Course topics

none

### Teaching methods

1. Lecture with 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	30	2,00
Classes requiring direct contact with the teacher	18	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	12	1,00