

Polish course name	<b>OPAKOWANIA I SYSTEMY IDENTYFIKACJI PRODUKTÓW</b>
English course name	<b>PACKAGING AND PRODUCT IDENTIFICATION SYSTEMS</b>
Course code	<b>WIP-MDL-D1-PAPIS-04</b>
Field of study	<b>Materials design and logistics</b>
Level of qualification	<b>First degree</b>
Form of study	<b>Full-time</b>
Semester	<b>4</b>
Number of ECTS points	<b>2</b>
Ways of assessment	<b>Reports/Test</b>

**Number of hours per semester**

<b>Lecture</b>	<b>Seminar</b>	<b>Classes</b>	<b>Laboratory</b>	<b>Project</b>
15			15	

**TEACHERS:**

Dr inż. Dariusz Krzywda.

**COURSE OBJECTIVES:**

- › **C1** Presentation and discussion of theoretical issues concerning packaging, the scope and scale of packaging use, basic criteria for its division and function.
- › **C2** Characteristics and overview of product and packaging identification systems in use.

**PRELIMINARY REQUIREMENTS FOR KNOWLEDGE, SKILLS AND OTHER  
COMPETENCES:**

1. The student has basic knowledge of economics.
2. The student has basic knowledge of logistics.

3. the student is able to work in a team.
4. the student has basic knowledge of physics and chemistry from the scope of secondary education.

## **COURSE CONTENT**

### **LECTURE**

- › **L1** Introduction to the subject of packaging.
- › **L2** The packaging process as part of the logistics system.
- › **L3** Areas of application of packaging.
- › **L4** Definitions and classification of packaging.
- › **L5** Functions of packaging.
- › **L6** Requirements placed on packaging in logistic processes.
- › **L7** Obligations of the packaging producer introducing packaging into the economic cycle.
- › **L8** Marking of packaging, products.
- › **L9** Packaging in logistic chains.
- › **L10** Packaging in the economic cycle.
- › **L11** Materials used for packaging manufacture.
- › **L12** Packaging design guidelines.
- › **L13** Packaging waste.
- › **L14** Characteristics of packaging waste.
- › **L15** Packaging waste management systems.

### **Laboratory**

- › **Lab1** Introductory class, health and safety training, familiarisation with the regulations of the Packaging Laboratory.
- › **Lab 2, 3, 4** Identification and evaluation of packaging properties used for product protection.
- › **Lab 5, 6** Identification and evaluation of the properties of packaging auxiliaries used to protect products.
- › **Lab 7, 8** Analysis and evaluation of selected product packaging techniques.
- › **Lab 9, 10** Ways of labelling packaging and products.
- › **Lab 11** Design of packaging and labelling.
- › **Lab 12** The packaging process.

- › **Lab 13** Packaging from a logistics perspective. Packaging cycle in the supply chain.
- › **Lab 14** Pallet load units - types, physical, mechanical and functional properties.
- › **Lab 15** Circulation of loading units. Dimensional interdependence of pallets, means of transport and storage space.

### **BASIC REFERENCES**

1. Cierpiszewski R., Opakowania aktywne i inteligentne, Wydaw. Uniwersytetu Ekonomicznego, Poznań 2016 r.
2. Dudziński Z., Opakowania w gospodarce magazynowej: z dokumentacją i wzorcową instrukcją gospodarowania opakowaniami: stan prawny na dzień 1 stycznia 2014 r., ODDK [Ośrodek Doradztwa i Doskonalenia Kadr], Gdańsk 2014 r.
3. Korzeniowski A., Skrzypek M., Szyszka G. Opakowania w systemach logistycznych, Biblioteka Logistyka, Poznań 2010 r.

### **SUPPLEMENTARY REFERENCE MATERIALS**

1. Klonowska-Matynia M., Opakowania produktów na rynku mleczarskim: studium empiryczne, Wydaw. Politechniki Koszalińskiej, Koszalin 2011 r.
2. Krzywda D., Krzywda J. Logistyka zwrotna a zrównoważony rozwój. System kaucyjny opakowań w Niemczech. Cz.1, Logistyka nr 3, 2014 r.
3. Krzywda D., Krzywda J. Logistyka zwrotna a zrównoważony rozwój. System kaucyjny opakowań w Niemczech. Cz.2, Logistyka nr 3, 2014 r.
4. Kisperska-Moroń D. (red.) Logistyka. Biblioteka Logistyka, Poznań 2009 r.
5. Krzywda D. Packaging - from Neolithic to Packaging Industry, Zeszyty Naukowe Politechniki Częstochowskiej. Zarządzanie, Częstochowa, 2017 r.

### **LEARNING OUTCOMES**

- › **EU1** The student defines packaging and characterises factors influencing its use.
- › **EU2** The student divides packaging and describes its functions.
- › **EU3** The student analyses the determinants influencing the choice of packaging identification system, product and forms load unit.

## TEACHING TOOLS

- › Lecture using audiovisual means.
- › Laboratory equipment.

## WAYS OF ASSESSMENT (F – FORMATIVE, P – SUMMATIVE)

- › **F1.** Reports from laboratory exercises.
- › **F2.** Observation of the student work during laboratory classes.
- › **P1.** Evaluation of mastering the material taught in the lectures - test.

## STUDENT WORKLOAD

Form of activity	Number of hours	ECTS
Contact hours with the teacher		
Lectures	15	0,6
Seminar		
Classes		
Laboratory	15	0,6
Project		
Test		
Exam		
Total contact hours	30	1,20
Student's own work		
Getting acquainted with the indicated literature	5	0,2
Preparation for seminar		
Preparation for classes		
Preparation for lab	5	0,2

Project preparation		
Consultation	2	0,08
Preparation for the test	8	0,32
Total student's own work	20	0,8
<b>Total number of hours/ ECTS points for the course</b>	<b>50</b>	<b>2,0</b>

### ADDITIONAL INFORMATION

Timetable of classes	<a href="https://wip.pcz.pl/dla-studentow/plan-zajec/studia-stacjonarne">https://wip.pcz.pl/dla-studentow/plan-zajec/studia-stacjonarne</a>
Information about the consultation (time + place)	<a href="https://wip.pcz.pl/dla-studentow/konsultacje-dla-studentow">https://wip.pcz.pl/dla-studentow/konsultacje-dla-studentow</a>

### MATRIX OF LEARNING OUTCOMES REALISATION

Learning outcome	Reference of given outcome to outcomes defined for whole program	Course objectives	Course content	Ways of assessment
EU 1	K_W02, K_W03, K_W06, K_U02, K_U04, K_U07, K_K01, K_K02,	C1	L1 - L8 Lab1 - Lab12	F1, F2, P1
EU 2	K_W02, K_W03, K_W06, K_U02, K_U04, K_U07, K_K01, K_K02,	C1	L5 - L8 Lab4 - Lab12	F1, F2, P1
EU 3	K_W02, K_W03, K_W07, K_U02,	C1, C2	L8 - L15	F1, F2, P1

	K_U04, K_U07, K_K01, K_K04,		Lab1 - Lab15	
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## FORM OF ASSESSMENT - DETAILS

**EU1** The student defines packaging and characterises factors influencing its use.

- › 2,0 Student cannot define packaging and does not specify the scope of application of packaging.
- › 3,0 Student partially defines the term packaging and generally lists factors that affect the range of packaging used.
- › 3,5 The student defines the term packaging in general and generally lists the factors influencing the range of packaging used.
- › 4,0 The student defines packaging correctly and describes correctly factors influencing the range of packaging used.
- › 4,5 The student defines packaging almost very well and describes in detail almost very well factors influencing the range of packaging used.
- › 5,0 Student defines individual packages very well and describes very well in detail the factors influencing the range of packaging used.

**EU2** The student divides packaging and describes its functions.

- › 2,0 The student does not make a classification of packaging and does not know its functions.
- › 3,0 Student is able to make a general classification of packaging and identifies basic functions of packaging.
- › 3,5 The student is almost able to list and generally present the classification of packaging and lists some of its functions.
- › 4,0 The student is able to list and generally present the classification of packaging and lists some of its functions.
- › 4,5 The student is almost able to make a precise classification of packaging and knows almost very well all its functions.
- › 5,0 The student is able to make an accurate classification of packaging and knows all its functions very well.

**EU3** The student analyses the determinants influencing the choice of packaging identification system, product and forms load unit.

- › 2,0 The student does not make a classification of packaging and does not know its functions.
- › 3,0 Student lists determinants influencing the choice of packaging identification system and forms the unit of load.
- › 3,5 Student is almost able to list determinants influencing the choice of packaging identification system and not characterises not all of them and forms a loading unit.
- › 4,0 Student is able to list determinants influencing the choice of packaging identification system and characterises not all of them and forms a loading unit.
- › 4,5 The student is able to list and correctly describe all determinants influencing the choice of packaging identification system and forms the loading unit almost very well.
- › 5,0 The student is able to list and correctly describe all determinants related to the choice of packaging identification system and forms the unit of load very well.