

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Basics Construction and Utilization of Food Transportation Means		Code 1010612211010615351
Field of study Transport	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 1
Elective path/specialty Food Industry Machines and Refrigeration	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: - Laboratory: - Project/seminars: 1		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art		ECTS distribution (number and %)
Responsible for subject / lecturer: dr hab. inż. Krzysztof Bieńczyk email: krzysztof.bieniczak@put.poznan.pl tel. 61 665-2288 MRiT ul. Piotrowo 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Has a basic knowledge of ładunkoznawstwa and scratch built chassis.
2	Skills	Can perform basic calculations and chassis cooling design.
3	Social competencies	Is aware of the investigation in a professional manner.
Assumptions and objectives of the course: Familiarizing yourself with the construction and use of technical means of transporting food. Design and operational skills.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Is an ordered theoretical knowledge in the field of means of transport. - [K2A_W14]		
2. Has a basic knowledge in the field of technical operation of means of transport. - [K2A_W16]		
Skills:		
1. It can analyze objects and technical solutions in the field of transport and food. - [K2A_U10]		
Social competencies:		
1. He can think and act in an entrepreneurial way. - [K2A_K07]		
Assessment methods of study outcomes		
Written tests.		
Course description		
Intermodal food. Containers for the transport of food. Classification of containers. Test methods of thermal insulation and water. Cysternowe services-destination containers. Construction of containers isothermal (transportation over long distances, buying milk). Characteristics of tank equipment (hatches, valves, piping, fittings drain.) Methods of unloading containers (gravity, pressure). Systems for unloading tankers. Washing procedure. Vehicles for the transport of powdery foods without packaging. The loading and discharge (air transport and fluidyzacja). Vehicles for the transport of foodstuffs of hazardous materials.		

Basic bibliography:		
1. Zwierzycki W., Bieńczyk K. [red.] Pojazdy chłodnicze w transporcie żywności, System Serwis, Poznań 2006.		
2. Kwaśniewski S [red.] Pojazdy izotermiczne i chłodnicze, Navigator nr 7, Wrocław 1997.		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in the lecture	15	
2. Preparation for assessment	12	
3. Consultations	10	
4. Participation in class/project	15	
5. Preparation of the project.	11	
Student's workload		
Source of workload	hours	ECTS
Total workload	63	3
Contact hours	40	2
Practical activities	37	1