



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Cargo management [S1Trans1>ŁAD]

Course

Field of study

Transport

Year/Semester

3/5

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Knowledge: student has a basic knowledge of logistics (including transportation and warehousing) moreover packaging and physics as well Skills: student is able to accumulate information, interpret it, reasoning based on it, express and justify opinions, identify, associate and interpret phenomena occurring in a practice Social competence: student is aware of the importance and understands non-technical aspects and effects of transportation processes, including those connected with cargos

Course objective

To give to students a basic theoretical and practical knowledge of cargo management as well as methods and techniques of forming, transporting, handling and storing cargo units in connection with a real life solutions allowing for such operations.

Course-related learning outcomes

Knowledge:

The student has an ordered, theoretically founded general knowledge of technology, transport systems and various means of transport

Skills:

The student is able to obtain information from various sources, including literature and databases (both in Polish and in English), integrate it properly, interpret it and critically evaluate it, draw conclusions, and comprehensively justify his/her opinion.

Social competences:

The student understands that in technology, knowledge and skills very quickly become obsolete

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

A final written exam based on the knowledge obtained within the lectures.

Programme content

The content of the module program:

- 1) Introduction..
- 2) Cargo units.
- 3) Dimensional systems of packaging and cargo units.
- 4) Labeling and identification of cargo.
- 5) Basics of physics in freight transportation.
- 6) Loading planning.
- 7) Loads securing on a vehicle.
- 8) Transport and (un)loading technologies.
- 9) Transport of main types of special cargo.
- 10) Damages of loads.

Course topics

The content of lectures:

- 1) Cargoes - introduction to the subject. The essence of cargo science, cargo vs. commodity, basic types of cargo, transportability of cargo, cargo exposures, risk of damage, sensitivity to impact, basic ways of cargo classification.
- 2) Cargo units. Definition and essence of cargo units, tasks of cargo units and means, auxiliary means of preparation of cargo units - classification, types of cargo units and detailed discussion of: container cargo units, pallet cargo units, container cargo units and package cargo units. Foiling and banding of container and pallet units.
- 3) Dimensional systems of cargo/packaging units. Dimensional size chain, interrelation of dimensional sizes, dimensional system of packaging, dimensional system of cargo units - ISO containers, means of transport - basic parameters.
- 4) Labeling of cargo units / packages and their identification. Definition and legal basis, basic types of signs and their form, labeling of cargo units (pallet and container ones), basic principles of labeling and bar codes, logistics label and RFID.
- 5) Fundamentals of the physics of cargo transportation. Mass versus weight. Force of inertia and friction. Moment of force. Flat arbitrary force system and its equilibrium conditions and equations. Forces versus safety of carriage.
- 6) Load distribution on the vehicle. Basic guidelines. King pin. Axle pressures and their measurement. Loading plan - preparation and software.
- 7) Securing loads on a vehicle. Factors determining the safety of cargo on a vehicle. Normative immobilization of cargo. Stability / stability of cargo. Lashing methods and securing measures. Lashing/ transport straps, tensioners, anchor bars, spreader bars, overboard beams, anti-slip mats, safety nets and dunnage bags. Number of lashing means. 10 principles of proper cargo securing in transportation.
- 8) Carriage and cargo handling technologies. Definition, basic types of carriage technologies and their characteristics, choice of technology - general guidelines, carriage technology of selected cargoes - characteristics, handling equipment - division, forklifts (characteristics, 13 basic movements, instrumentation), pallet and lift trucks, loading boards, semi-trailers and trailers, self-unloading vehicles.
- 9) Transportation of basic types of special cargo. Legal basis. Transportation law vs. special cargoes, types of special cargoes, legal basis for the transportation of special cargoes, refrigerated food transportation, transportation of dangerous goods, transportation of live animals, and transportation of oversized cargoes.

10) Cargo damage. Causes and procedures for handling and insurance issues, cargo condition monitoring.

Teaching methods

Lectures including multimedia presentation, movies, discussions, short checking ad-hoc tests

Bibliography

Basic

1. Korzeń Z.: Logistyczne systemy transportu bliskiego i magazynowania. Tom I: Infrastruktura, technika, informacja. Instytut Logistyki i Magazynowania w Poznaniu, Poznań, 1998 (in Polish)
2. Mindur L. (red.): Technologie transportowe XXI wieku. Instytut Technologii Eksploatacji – PIB, Warszawa, 2008 (in Polish)
3. Mokrzyński H.: Ładunkoznawstwo. Technologia zabezpieczenia ładunków w transporcie. WKiŁ, Warszawa, 1985 (in Polish)
4. Krasowska K., Popek M.: Ładunkoznawstwo. Wydawnictwo Uczelniane AM Gdynia, Gdynia, 2006 (in Polish)
5. Podręcznik Stosowania Systemu EAN•UCC. Instytut Logistyki i Magazynowania, Poznań, 2004 (in Polish)
6. Prochowski L. Żuchowski A.: Technika transportu ładunków. WKiŁ, Warszawa, 2009 (in Polish)

Additional

1. Karpiel Ł., Skrzypek M.: Towaroznawstwo ogólne. Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków, 2000 (in Polish)
2. Korzeniowski A., Skrzypek M., Szyszka G.: Opakowania w systemach logistycznych. Instytut Logistyki i Magazynowania w Poznaniu, Poznań, 2001 (in Polish)
3. Lisińska-Kuśnierz M., Ucherek M.: Współczesne opakowania. Wydawnictwo Naukowe PTTŻ, Kraków, 2003 (in Polish)
4. Praca zbiorowa: Kody Kreskowe. Rodzaje, standardy, sprzęt, zastosowania. Instytut Logistyki i Magazynowania, Poznań, 2000 (in Polish)
5. Pusty T.: Przewóz materiałów niebezpiecznych. Poradnik kierowcy. WKiŁ, Warszawa, 2003 (in Polish)
6. Sikorski P.M., Zembrzycki T: Spedycja w praktyce. Polskie Wydawnictwo Transportowe, Warszawa, 2006 (in Polish)

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00