



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Cargo management

Course

Field of study

Year/Semester

Transport

3/5

Area of study (specialization)

Profile of study

- general academic

Level of study

Course offered in

Second-cycle studies

Polish

Form of study

Requirements

full-time

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

18

0

0

Tutorials

Projects/seminars

0

0

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

Adam Redmer PhD (Hab) Eng.

E-mail: adam.redmer@put.poznan.pl

Phone: +48 61 665 21 29

Faculty of Civil and Transport Engineering

3 Piotrowo street, 61-132 Poznan, POLAND

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

1. Students know the notion, features and types of cargo units. Know types and methods of forming cargo units.
2. Students know principles of loading and fastening cargo units on vehicles. Know principles and techniques of cargo units labeling and identification.
3. Students know main transportation technologies and associated with them legislative aspects. Know principles of cargo units monitoring during transportation processes and loss and damage procedures.

Skills

1. Students are able to design transportation processes of selected types of commodities. Are able to select cargo units forming and fastening methods.
2. Students are able to assess transportability of cargo units and transportation risks. Are able to select appropriate labeling and identification techniques.
3. Students are able to carry out a loss and damage procedure (transportation claim).

Social competences

1. Students are aware of the significance of cargo units forming process and risks and responsibilities associated with this.
2. Students are aware of potential technical, economic and social effects that an improper / incorrect forming, transportation and storing of cargo units may cause.
3. Students are able to develop independently their knowledge of cargo management.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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

Programme content

Cargo management – introduction to the subject: the essence of the cargo management, cargo units versus commodities, main types of cargo units, transportability, transportation losses and damage risks, shock sensitivity, basic classifications of commodities and cargo units.

Cargo units: definition, essence and purpose, cargo units forming means and techniques – classification and types including: boxes, pallets, containers and batches. Stretch wrapping and strapping.

Dimensions of cargo units and packages: basic dimension chains, dimension interrelationships of packages and cargo units – ISO containers, loading parameters of vehicles.



Labeling and identification: definition and basic legislative aspects, main types and methods of labeling, labeling of cargo units (palettes and containers), basic rules of correct labeling, barcodes, logistics label and RFID.

Transportation and handling technologies: definition, types and characteristics, selection of an appropriate technology – general rules, transportation technology for selected types of commodities – characteristics and techniques, forklifts (technical characteristics, the 13 basic moves, accessories), palette trucks, semi-trailers and trailers, dump trucks.

Loads location and securing on vehicles: a load distribution (basic rules, trailer pins, axle loads and their measurement), factors influencing load safety, load securing – techniques: belts, fasteners, blocking and bracing, anti-sliding mats, dunnage air bags and the 10 rules of the correct load securing in transportation.

Legislative basis of transportation of selected types of commodities: transportation law versus loads that require special treatment, main types of loads that require special treatment, perishable goods, dangerous goods, transportation of animals, and oversized loads.

Transportation losses and damages: transportation claims, causes and procedures, insurances, loads 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. Karpień 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	2,0
Classes requiring direct contact with the teacher	18	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	42	1,0

¹ delete or add other activities as appropriate