POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Systems of internal transport nad storage [N1Trans1>STBiM]

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
part-time

Requirements
compulsory

Number of hours

Lecture
9

Laboratory classes
0

Other (e.g. online)
0

Tutorials
9

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Knowledge: basic knowledge from the field of theory of machines, economy, mathematics and logistics;
Skills: basic knowledge from the field of theory of machines, economy, mathematics and logistics; Social
competences: understanding the need of acquiring transferred knowledge;

Course objective

Objectives of the subject: gaining knowledge in the following areas: process analysis; modelling and
management of close-transport and storage systems; ability of practical designing of simple close-
transport and storage systems;

Course-related learning outcomes

Knowledge:
1.has ordered, theoretically founded general knowledge of technology, transport systems and various
means of transport
2. has a structured and theoretically founded general knowledge in the field of key technical issues and
detailed knowledge of selected issues in this discipline of transport engineering
3. has knowledge of significant directions of development and the most important technical

achievements and other related scientific disciplines, in particular transport engineering

Skills:
1.can, when formulating and solving tasks in the field of transport, apply appropriately selected methods, including analytical, simulation or experimental methods
2. is able to assess - at least to a basic extent - various aspects of the risk associated with a transport project
3.can organize, cooperate and work in a group, assuming different roles in it, and can properly define priorities for the implementation of a task set by himself or others

Social competences:
1. understands that in technology knowledge and skills very quickly become obsolete
2. is aware of the importance of knowledge in solving engineering problems, knows examples and understands the causes of malfunctioning transport systems, which have led to serious financial and social losses, or to a serious loss of health and even life

Methods for verifying learning outcomes and assessment criteria
Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Lecture: course credits obtained on the basis of a colloquium;
Tutorials: credits obtained on the basis of a colloquium, grades received for assignments solved during classes as well as evaluation of design assignments prepared at home;

Programme content

Definition of storage and internal transport. Evolution of the process from transport action through transport process to transport system. Impact of logistics on system development.
Systemic approach in phases of identification, designing and implementation of close-transport and storage systems. Integrated flow of energy, materials and information in transport systems (physical circulation of goods, energy and information in a storehouse). Logistics technique – transport processes, functional classification planes in the material flow technique. Functioning of a storehouse.
Impact of means of logistics technique (cargoes in internal transport, means of transport and storehouse equipment, including: cranes, trucks, piling machines, transporters, devices servicing loading units, means used to form and de-palletize palette loading units, equipment used to control the size of loading units, their safely, mechanisms needed for sorting and storage of goods, bar codes, storehouses) on the functioning of the system. Discussion of selected means of storehouse equipment or other elements of a close-transport system. Flexible systems of production and transport.
Examples of solutions of existing and functioning systems of internal transport and storage.
Methodology of designing a storehouse and close-transport systems (designing process, choice of concept from the point of view of the extent of automation of storage work; methodological choice of the concept of the solution of stages of the technological process; systematised choice of the arrangement of storehouses as well as means of servicing and equipment; optimisation of storehouse size). Composition of the design team. Technology and organisation of storehouse work. Storehouse processes – flow management of cargo and information flows – division, tasks and actions of automatic control of the flow of materials. System effectiveness and costs. Designing of connection of the system with means of distant-transport.

Teaching methods

1. Lecture with multimedia presentation (form of informative lecture with elements of problem and conversation lecture)
2. Tutorials - solving tasks

Bibliography

Basic
1. Fijałkowski J.: Transport wewnętrzny w systemach logistycznych, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2003
2. Korzeń Z.: Logistyczne systemy transportu bliskiego i magazynowania, tom I i II. Wyd. ILiM, Poznań 1998

Additional
1. Fijałkowski J.: Technologia magazynowania, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1995

Breakdown of average student's workload

	Hours	ECTS
Total workload	48	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)	30	1,00