COURSE DESCRIPTION CARD - SYLLABUS

Course name
Infrastucture for public transport [N2Trans1>ITP]

Course

Field of study
Transport

Year/Semester
2/3

Area of study (specialization)
Low-emission Transport

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
18

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

dr inż. Michał Pawłowski
michal.pawlowski@put.poznan.pl

Lecturers

Prerequisites

KNOWLEDGE: student has knowledge of mathematics and physics useful in solving tasks connected with car and rail transport construction; student has knowledge on theoretical mechanics, strength of materials, transportation systems and traffic engineering; student has knowledge on transport infrastructure; SKILLS: student can analyse, synthetize and interpret acquired information; student has an ability to independently learn and acquire knowledge; SOCIAL COMPETENCIES: student is conscious about a need to work for a common good, to reach goals both individual and social; student applies rules of culture and social cohabitation, notices other people"s needs.

Course objective

Passing to the students general knowledge on land public transport"s infrastgructure. Passing to the students preliminary knowledge on construction and exploitation of railroads and on transport network"s nodes. Passing to the students preliminary knowledge on shaping public transport"s network with interchange points and on public transport stop"s accessibility.

Course-related learning outcomes

Knowledge:

1. The student has a structured and theoretically founded general knowledge related to key issues in the field of transport engineering
2. The student has knowledge of development trends and the most important new achievements of means of transport and other, selected, related scientific disciplines
3. The student has advanced and detailed knowledge of the processes taking place in the life cycle of transport systems

Skills:
1. The student is able to make a critical analysis of the existing technical solutions and propose their improvements (improvements)
2. The student is able - in accordance with a given specification, taking into account non-technical aspects - to design a complex device, system in the field of transport engineering or a process and implement this project - at least in part - using appropriate methods, techniques and tools, including adapting the existing or by developing new tools.

Social competences:
1. The student understands that in transport engineering knowledge and skills quicly become outdated;
2. The student is conscious about a need to extend own professional achievements and to obey proffesional work ethics.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
The acquired knowledge from the lectures is verified by a written colloquium done on the last lecture. The form of the colloquium will be presented by the lecturer during the first class. With a small number of students it is possible to change the form into an oral colloquium, requiring acceptance from the lecturer and majority of students. To pass the colloquium, students should acquire at least 50% of points. Activity during the lectures may be taken into account during the colloquium"s score evaluation. Grade scale: 50-59% 3,0; 60-69% 3,5; 70-79% 4,0; 80-89% 4,5; 90-100% 5,0.

Programme content

The module's programme covers:
- lectures on roads used by public transport vehicles, i.e. their classification and geometrical layout;
- lectures on public transport interchange nodes;
- lectures on places where roads meet, on example of junctions and stations.

Course topics

1. Railway network, categorisation of railway lines;
2. Railroad design in plane and profile;
3. Basic elements of railroad superstructure and subgrade;
4. Design of railroad’s cross-sections;
5. Basic of railroad work’s technology, railroad"s maintenance, exploitations and diagnosis;
6. Small station’s track layout and manoeuvring technology;
7. Junctions;
8 City and agglomeration public transport;
9. Public transport stops and interchange points.

Teaching methods

An informative lecture including elements of a conversation lecture, utilising a multimedia presentation with an occasional use of a blackboard. A choice of films available on the Internet.

Bibliography

Basic
1. Bałuch. H., Bałuch M.: Układy geometryczne toru i ich deformacje. KOW, Warszawa 2010.
2. Basiewicz T., Gołaszewski A., Rudziński L.: Infrastruktura transportu. Politechnika Warszawska, Warszawa 2002.

3. Bogdaniuk B., Towpik K.: Budowa, modernizacja i naprawy dróg kolejowych. KOW, Warszawa 2010.
4. Cieślakowski S.: Stacje kolejowe. WKiŁ, Warszawa 1992.
5. Gaca S., Suchorzewski W., Tracz M.: Inżynieriaruchu drogowego, teoria i praktyka. WKiŁ, Warszawa, 2014
6. Kędra Z.: Technologia robót kolejowych. Politechnika Gdańska, Gdańsk 2017.
7. Rozporządzenie w sprawie warunków technicznych jakim powinny odpowiadać budowle kolejowe i ich usytuowanie.
8. Sancewicz S.: Nawierzchnia kolejowa. KOW, Warszawa 2010.
9. Standardy techniczne - szczegółowe warunki techniczne dla modernizacji lub budowy linii kolejowych. PKP PLK.
10. Sysak J. (red.): Drogi kolejowe. PWN, Warszawa 1986.
11. Szczuraszek T. (red.): Bezpieczeństwo ruchu miejskiego. WKiŁ, Warszawa 2008
12. Towpik K.: Utrzymanie nawierzchni kolejowej. WKiŁ, Warszawa 1990…
Additional
1. Batko M.: Budowa i utrzymanie dróg kolejowych. WKiŁ, Warszawa 1985.
2. Kiewlicz S., Łączyński J., Pelc S.: Nawierzchnia kolejowa typu S60, S49, S42. WKiŁ, Warszawa 1974.
3. Semrau A., Zamięcki H.: Budowa i utrzymanie dróg kolejowych, tom II. WKiŁ, Warszawa 1975.
4. Podoski. Transport w miastach. WKiŁ. 1988.
5. Transport Miejski i Regionalny, Stowarzyszenie Inżynierów i Techników Komunikacji Rzeczpospolitej Polskiej, Warszawa.
6. Infrastruktura Transportu, ELAMED, Katowice.
7. Przegląd Komunikacyjny, Stowarzyszenie Inżynierów i Techników Komunikacji Rzeczpospolitej Polskiej, Warszawa.
8. Technika Transportu Szynowego, EMI-PRESS, Łódź.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	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)	32	1,00