STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Railways quick and urban**		Code **1010102131010126038**
Field of study **Civil Engineering Second-cycle Studies**	Profile of study (general academic, practical) **(brak)**	Year /Semester **2 / 3**
Elective path/specialty **Railways**	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: **-** Classes: **15** Laboratory: **-** Project/seminars: **-**		No. of credits **1**
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:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	K_W01. Has an advanced knowledge of sectors of mathematical and physical knowledge import ant for railway construction. K_W02, K_W14. Knows rules governing design and dimensioning of rail roads. K_W09, K_W16. Knows rules governing passenger service optimisation aimed at providing competitiveness of rail transport.
2	**Skills**	K_U02. Has an ability to classify rail roads and streets according to their function, administrative rank and technical parameters. K_U08. Can design a rail road in plane and profile; can design a rail station?s track layout. K_U15. Can calculate foundations for rail vehicles' electric traction. K_U16. Can use CAD tools to design geometrical layout of rail roads.
3	**Social competencies**	K_K01. Can work individually and in a group on a given task. K_K06. Is conscious about a need to improve own professional skills. K_K11. Behaves with regard to rules of ethics.

Assumptions and objectives of the course:

1) Deliver knowledge about rules of design and safe exploitation of high speed railway lines.
2) Deliver knowledge about shaping an effective and competitive to car traffic urban rail network

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Has knowledge about sustainable transport, - [K_W13]
2. Knows norms and codes for designing high speed railway lines and tram lines, - [K_W14]
3. Knows rules of shaping high speed rail networks and urban rail networks. - [K_W16]

Skills:

1. Can design a transport system according to rules of sustainability, - [K_U08]
2. Can choose tools to design an urban rail road, - [K_U13]
3. Has an ability to investigate a technical problem concerning a high speed rail line or an urban rail line. - [K_U17]

Social competencies:

1. Is conscious about a need to fulfil rules of sustainable transport, - [K_K04]
2. Understands a need to present knowledge about rail transport?s benefits to modern societyo, - [K_K08]
3. Takes care about own health and physical fitness by using modes of transport alternative to the car - [K_K13]

Assessment methods of study outcomes

Activity during classes and an oral or a written colloquium at semester?s end.

Course description

Design of high speed railway lines. Geometrical layout of high speed railway lines. Design of tram tracks. Role of certain rail transport modes in a city. Potential of unconventional rail roads (magnetic rail, cogged rail).

Basic bibliography:

1. Datka S., Suchorzewski W.: Tracz M. Inżyniera Ruchu. WKiŁ, Warszawa 1999.
2. Massel A.: Projektowanie linii i stacji kolejowych. KOW, Warszawa 2010.
3. Podoski J.: Transport w miastach. WKiŁ, Warszawa 1977.
4. Rojek A.: Tabor i trakcja kolejowa. KOW, Warszawa 2010.
5. Rozkwitalska C.: Koszty i korzyści transportu zbiorowego i indywidualnego w miastach. IGPiK, Warszawa 1997.
6. Woch J.: Podstawy inżynierii ruchu kolejowego. WKiŁ, Warszawa 1983.
7. Żurkowski A., Pawlik M.: Ruch i przewozy kolejowe, sterowanie ruchem. KOW, Warszawa 2010.

Additional bibliography:

1. Cieślakowski S.: Stacje kolejowe. WKiŁ, Warszawa 1992.
2. Ostaszewicz J., Rataj M.: Szybka komunikacja miejska. WKiŁ, Warszawa 1979.
3. Sysak J.: Podstawy dróg kolejowych. WKiŁ, Warszawa, 1982.
4. Szczuraszek T.: Bezpieczeństwo ruchu miejskiego. WKiŁ, Warszawa 2005.
5. Tracz M., Allsop R. E.: Skrzyżowania z sygnalizacją świetlną. WKiŁ, Warszawa 1990.
6. Woch J.: Narzędzia analizy efektywności i optymalizacji sieci kolejowej. WPŚl., Gliwice 2001.
7. Przegląd Komunikacyjny, Stowarzyszenie Inżynierów i Techników Komunikacji Rzeczpospolitej Polskiej, Warszawa.
8. Technika Transportu Szynowego, EMI-PRESS, Łódź.
9. Transport Miejski i Regionalny, Stowarzyszenie Inżynierów i Techników Komunikacji Rzeczpospolitej Polskiej, Warszawa.
10. Proceedings of a cyclic conference: Problemy komunikacyjne miast w warunkach zatłoczenia motoryzacyjnego.

Result of average student's workload

Activity	Time (working hours)
1. Student?s attendance to lectures and classes.	12
2. Preparation to colloquium.	16

Student's workload

Source of workload	hours	ECTS
Total workload	25	1
Contact hours	15	1
Practical activities	10	0