



Subject card

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|---|---|--|-------------------------------------|------------|--|---------|-----|
| Subject name and code | Road Traffic Engineering, PG_00044621 | | | | | | |
| Field of study | Transport | | | | | | |
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | | | 2023/2024 | | |
| Education level | first-cycle studies | Subject group | | | Obligatory subject group in the field of study Subject group related to scientific research in the field of study | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 3 | Language of instruction | | | Polish | | |
| Semester of study | 5 | ECTS credits | | | 5.0 | | |
| Learning profile | general academic profile | Assessment form | | | exam | | |
| Conducting unit | Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Wojciech Kustra | | | | | |
| | Teachers | mgr inż. Łukasz Jeliński dr inż. Wojciech Kustra | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 30.0 | 0.0 | 15.0 | 15.0 | 0.0 | 60 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM | | |
| | Number of study hours | 60 | 5.0 | 60.0 | 125 | | |
| Subject objectives | The aim of the course is to familiarize students with the description and operation of the system, the system man - vehicle - road - traffic - environment (CPDRO), a description of the main factors affecting the occurrence of road traffic, and review of traffic management methods. On this basis, the student should apply selected methods of traffic management and road facilities design elements with regard to efficiency, economic efficiency, safety and environmental requirements. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [K6_W09] has basic knowledge of transport traffic engineering to understand its importance for transport operation and differentiate between how it is applied in different modes of transport | The student has a basic knowledge of the functioning of the system of human, vehicle, road environment. He also has knowledge of research methods and tools for traffic on about managed traffic. | | | [SW1] Assessment of factual knowledge | | |
| | [K6_K01] able to think and act creatively and enterprisingly; able to define priorities to support the delivery of an individual or group task; understands the need for continuous education and taking responsibility as a professional for their work and the work of the team | Student CPDRO defines the elements of the system, establishes methods of measuring traffic, performs measurements and on that basis the functioning of the analyzed object. He then describes the relationship between the basic parameters of the traffic, selects the method and means of traffic organization, calculates bandwidth elements of the road network and evaluates traffic conditions, then designing elements of traffic organization. | | | [SK5] Assessment of ability to solve problems that arise in practice | | |
| | [K6_U08] able to solve simple transport logistics and traffic engineering problems | Student is able to put into practice some of the tools motion studies and basic tools for traffic management to assess the functioning of the road object and uses the most effective ways and means to manage traffic. | | | [SU4] Assessment of ability to use methods and tools | | |

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| Subject contents | <p>LECTURE Road traffic engineering. CPD system. Road users - man as a subject in motion. Vehicles and their traffic conditions. Vehicle maneuvers. Mechanics of vehicle movement. Basics of modeling dynamics and analysis of vehicle motion. Road and surroundings. Road and traffic factors, climatic and meteorological factors. Features and parameters of movement. Research, measurements and traffic analysis. Modeling of road traffic. The role of traffic volume and speed as basic traffic parameters. Capacity of intersections. Capacity of road sections and streets. Traffic organization methods. Means of traffic organization. Traffic lights. Traffic safety measures. Basics of traffic control. EXERCISES LABORATORY Methods of calculating the capacity of roundabout intersections, ordinary intersections and intersections with traffic lights. DESIGN EXERCISES Design of traffic organization at an intersection. Design of traffic lights at the crossroads.</p> | | |
| Prerequisites and co-requisites | Knowledge of the Fundamentals of Transport Systems. | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | | 90.0% | 20.0% |
| | | 60.0% | 60.0% |
| | | 90.0% | 20.0% |
| Recommended reading | Basic literature | Gaca S., Suchorzewski W., Tracz M.: Inżynieria Ruchu Drogowego WKŁ 2008 | |
| | Supplementary literature | <p>Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r. Krystek R. i inni.: Komputerowe systemy sterowania ruchem ulicznym i drogowym. Przykłady zastosowań. WKŁ 1984 Leśko M., Guzik J.: Sterowanie ruchem drogowym. WPS, 2000. Malarski M.: Inżynieria Ruchu Lotniczego OWPW, 2005 Czasopisma: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady</p> | |
| | eResources addresses | Adresy na platformie eNauczenie: | |
| Example issues/ example questions/ tasks being completed | | | |
| Work placement | Not applicable | | |