COURSE DESCRIPTION CARD - SYLLABUS

Course name
Basics of road and municipal systems [N2MiBP1-MR>PSDiK]

Course

Field of study
Mechanical and Automotive Engineering

Year/Semester
1/2

Area of study (specialization)
Heavy-duty Machines

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
9

Projects/seminars
0

Number of credit points

3,00

Coordinators

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Lecturers

Prerequisites

Has general mathematical and physical vision and knows the general construction of road transport. He knows the classification of means of transport. He can use a computer in the field of office software. Collaboration and group work. Correct identification of problems and approach to solving dilemmas. Responsibility.

Course objective

Getting to know road and communication systems in the country and in the world. Understanding development trends road and municipal systems.

Course-related learning outcomes

Knowledge:
Has general knowledge of standardization, EU recommendations and directives, national, industry and international standards systems, and industrial standards.
Has a basic knowledge of quality management systems.
Has a general knowledge of the types of research and methods of testing working machines with the use of modern measurement techniques and data acquisition.

Skills:
Can formulate and test hypotheses related to simple research problems.
Can plan and carry out experimental research of specific processes taking place in machines and routine tests of a working machine or a vehicle from a selected group of machines.
Is able to carry out basic measurements of mechanical quantities on the tested working machine with the use of modern measuring systems.

Social competences:
He is ready to critically assess his knowledge and received content.
Is ready to recognize the importance of knowledge in solving cognitive and practical problems and to consult experts in case of difficulties in solving the problem on its own.
It is ready to fulfill social obligations, inspire and organize activities for the benefit of the social environment.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Written exam in the field of lecture.
Final test in the field of blackboard exercises.

Programme content

Topics covered in the course include such areas as a systems view of transport, traffic studies, and the measurement of public transport passenger traffic. Cartograms, basic elements of capacity theory will be discussed. The course will also cover topics such as statistical research, measurement techniques, speed measurement, traffic segregation and safety, traffic control systems and devices, and traffic lights.

Course topics

Lecture topics:
System view of transportation - general basis of systems theory in relation to transportation.
A comprehensive study of traffic. Traffic generation. Accompanying studies. Measurement of traffic volume Public transport passengers. Measurement of traffic volume. Cartograms. Traffic planning. Distribution Traffic in the network. Basic elements of capacity theory. Consideration of multiple roads, compilation of distance and time in road resistance, impact of limited capacity. Traffic surveys and measurements. Research
Comprehensive studies. Statistical studies. Monitoring. Measurement techniques. Measurement of speed. Segregation and
Traffic safety. Traffic control systems and devices. Traffic light signaling.

Topics of exercises
1 Comprehensive traffic studies.
2. measurement of traffic volume of vehicles
3. cartograms (calculations, execution).
4. measurement of traffic volume of public transport passengers

Teaching methods

Lecture with a multimedia presentation, study classes

Bibliography

Basic
Gaca S., Suchorzewski W., Tracz M., Inżynieria ruchu drogowego, teoria i praktyka, Warszawa, WKiŁ, 2008 / 2014.
Gajda J, Sroka R., Stencel M., Żegleń T., Burnos P., Piwowar P., Pomiary parametrów ruchu drogowego, Kraków, Wydawnictwa AGH 2012.
Additional

Komar Z., Wolek C., Inżynieria ruchu drogowego - wybrane zagadnienia, Wrocław, WPW 1994.

Breakdown of average student's workload

	Hours	ECTS
Total workload	45	3,00
Classes requiring direct contact with the teacher	27	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	18	1,00