COURSE DESCRIPTION CARD - SYLLABUS

Course name

Basics of road and municipal systems

Course

Field of study

Mechanical and Automotive Engineering

Year/Semester

2/2

Area of study (specialization)

Machines

Profile of study

general academic

Level of study

Second-cycle studies

Course offered in

Polish

Form of study

full-time

Requirements

elective

Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

15

Projects/seminars

0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

PhD ENG Jakub Kowalczyk

email: Jakub.Kowalczyk@put.poznan.pl

tel. 61-665 2248

Faculty of Civil and Transport Engineering

3 Piotrowo street, 60-965 Poznan

Responsible for the course/lecturer:

PhD ENG Dariusz Ulbrich

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tel. 61-665 2248

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3 Piotrowo street, 60-965 Poznan

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:

Written exam in the field of lecture.

Final test in the field of blackboard exercises.

Programme content

Systemic approach to transport - general foundations of systems theory in relation to transport. Comprehensive traffic study. Generation of traffic. Accompanying research. Traffic volume measurement public transport passengers. Traffic volume measurements. Cartograms. Traffic planning. Schedule network traffic. Basic elements of bandwidth theory. Multiple Way Consideration, Compilation distance and time in road resistance, the effect of limited capacity. Research and measurement of traffic. Research complex. Statistical research. Monitoring. Measurement techniques. Speed measurement. Segregation and traffic safety. Traffic control systems and devices. Traffic lights.

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	75	3,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	30	1,0

[1] delete or add other activities as appropriate