

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Engineering and Road Safety</b>		Code <b>1010102121010126060</b>
Field of study <b>Civil Engineering Second-cycle Studies</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>Road and Motorway Engineering</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>30</b> Classes: <b>15</b> Laboratory: <b>-</b> Project/seminars: <b>30</b>		No. of credits <b>5</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art		ECTS distribution (number and %)
<b>Responsible for subject / lecturer:</b>		
dr inż. Jaroslaw Wilanowicz email: jaroslaw.wilanowicz@put.poznan.pl tel. 61-665-24-86 Faculty of Civil and Environmental Engineering Piotrowo street, 3. Poznań.		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	K_W06. Student has knowledge of road design guidelines and related technical specification. K_W07 and K_W09. Student knows the rules of the design and construction of road earthworks; K_W10. Student have a basic understanding of how to design road infrastructure.
2	<b>Skills</b>	K_U01. Student is able to classify the elements of roads. K_U08. Student is able to dimensioned the basic elements of the road. K_U14. Student is able to prepare of preliminary road project.
3	<b>Social competencies</b>	K_K01. Student is able to work independently. K_K06. Student is aware of the need to raise their professional competence. K_K10. Comply with the rules of ethics.
<b>Assumptions and objectives of the course:</b>		
1) Transfer of knowledge in the theory of organization and traffic management and in the analysis and assessment of road safety. 1) Manufacturing ability to identify and solve important problems in the field of organization and traffic safety.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. He knows the issues concerning the organization and traffic management and the traffic safety. - [K_W08 i K_W19] 2. He knows the rules of the organization, regulation and control of traffic flows and parking of vehicles. - [K_W02] 3. He knows the programs to improve road safety in Poland and the world. - [K_W13] 4. He knows the rules of road safety audit. - [K_W10]		
<b>Skills:</b>		
1. He knows how to classify the elements of traffic organization and road events (ie. accidents and collisions). - [K_U02] 2. He is able to analyze the effectiveness and the traffic safety risks at the stage of designing construction projects and the stage of operation of road objects as well as implement appropriate improvement measures (including traffic safety). - [K_U12] 3. He can choose the appropriate means of traffic organization to solve issues relating to the traffic management and define the evaluation criteria used in the traffic safety audit. - [K_U13]		
<b>Social competencies:</b>		

1. He is aware of the need for professional development. - [K\_K06]
2. He is able to formulate and present opinions on the subject of engineering and road safety. - [K\_K07]
3. He follows the rules of professional ethics. - [K\_K11]

### Assessment methods of study outcomes

Student's knowledge is assessed based on a written exam, which takes place at a examination session after the end of semester.

The exam consists of three questions and takes 45 minutes.

Information about the form of the test and its duration shall be provided to students during the first lecture in the semester, and the exam date is set with the students at the end of the semester.

Student's skills are evaluated on the basis of performed project, and its qualitative assessment is based on essential and aesthetic performing of drawing and computational exercises (the subject and content of the project is given on the theme card).

Completion date of the project is the last design tutorial in the winter semester.

### Course description

Elements of traffic management and system ? formulation of traffic problems. Modelling and simulation of traffic process. Engineering objects as a traffic system elements. Principles of organization, control and operation of motor traffic flows and parking ? systems and devices. Theory of traffic capacity and congestion. Effective using the capacity of road objects and the capacity of objects complexes in communication networks. Organization of public transport.

Road safety in law. Programs to improve road safety in Poland and the EU countries. The impact assessment of road projects on the level of road safety. Road safety audits of road projects. Road safety management.

#### Basic bibliography:

1. Datka, Suchorzewski, Tracz. Inżynieria Ruchu. WKiŁ. 1999 i późniejsze.
2. SzczuraszekT. Bezpieczeństwo ruchu miejskiego. WKiŁ. 2005.
3. Praca zbiorowa. Badanie zagrożeń w ruchu drogowym. Wydawnictwo PAN. 2005.
4. Podoski. Transport w miastach. WKiŁ. 1988.

#### Additional bibliography:

1. Materiały krajowych konferencji dotyczących BRD.
2. Flaferty. Traffic Planning and Engineering. Edward Arnold. 1986.
3. Blunden. Transport System. Pergamon Pres. 1984.

### Result of average student's workload

Activity	Time (working hours)
1. Direct participation of the student in the lectures.	30
2. Direct participation of the student in the design classes.	45
3. Additional consultation with the teacher.	3
4. Independent execution of the project.	31
5. Learning student to prepare himself to pass the exam.	30
6. Direct participation of the student in the writing exam.	1

### Student's workload

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	75	3
Practical activities	45	2