

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Ergonomics in transportation</b>		Code <b>1010612321010622232</b>
Field of study <b>Transport</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>Road Transport</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>1</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>1</b>
Status of the course in the study program (Basic, major, other) <b>other</b>		(university-wide, from another field) <b>university-wide</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>1 100%</b> <b>1 100%</b>
<b>Responsible for subject / lecturer:</b>  Marek - Zablocki email: marek.zablocki@put.poznan.pl tel. 616652056 IT ul. Piotrowo 3, 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	basic knowledge from the field of technique; science about man;
2	<b>Skills</b>	logical thinking, utilisation of information acquired from the library, Internet, standards, catalogues;
3	<b>Social competencies</b>	understanding the need of acquiring transferred knowledge;
<b>Assumptions and objectives of the course:</b> Gaining knowledge on the subject: significance of ergonomics in the activities of engineers; designing technical objects in transport with special attention being paid to somatic and receptor relations in the system man - technical object;		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Has a structured, theoretically founded knowledge in the field of traffic engineering, knows analytical models of traffic flows, - [K2A_W05]		
2. Has a detailed knowledge of the technical operation, reliability and safety of systems, including: safety of technical systems - structural, functional and time surplus, reliability and security of man/technical object/environment systems. - [K2A_W16]		
<b>Skills:</b>		
1. Is able to obtain information from the literature, internet, databases and other sources in Polish and English. Can integrate the information to interpret and learn from them, create and justify opinions. - [K2A_U01]		
2. Has the ability to self-educate using modern teaching tools such as remote lectures, webpages and databases, educational software, electronic editions. - [K2A_U06]		
3. Is able to communicate using a variety of techniques in a professional environment and other environments using the formal record of the design, technical drawings, concepts and definitions in the scope of the study area. - [K2A_U02]		
<b>Social competencies:</b>		

1. Understands the need and knows the possibilities of lifelong learning, knows the need for acquiring new knowledge for professional development. - [K2A\_K01]
2. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment and responsibility for own decisions in short and long-term aspect - [K2A\_K02]
3. Is able to act in a professional manner, comply with the rules of professional ethics and respect for cultural diversity. - [K2A\_K03]
4. Is able to identify and resolve the dilemmas associated with the profession, among others. problems at the technology/environment level. - [K2A\_K06]

<b>Assessment methods of study outcomes</b>		
course credits obtained on the basis of evaluation of tasks carried out in groups		
<b>Course description</b>		
<p>Basic concepts: origin of ergonomics as a scientific discipline, legal protection of man; the system of man ? work ? environment; corrective and creative ergonomics of adjustment of the work environment to man;</p> <p>Methodology of ergonomic evaluation of technical projects; somatic and receptor relationships and hazards in the anthropotechnical system;</p> <p>Physiology of physical effort in ergonomics; anthropometric and biomechanical investigations of man and their computer modelling;</p> <p>Work environment and hazards in machine construction (including: lighting, noise and microclimate); basics of designing of work-stands, e.g. work-station for a driver, computer station;</p> <p>Requirements and criteria of ergonomics and labour safety; possibilities of ergonomic computer systems as exemplified by the system: a driver -personal car; reproduction of man?s collision; reaching out with limbs and limb ranges; investigation of the correctness of distribution of comfort zones in an anthropotechnical system;</p> <p>Ergonomic form shaping of technical objects on selected examples from the field of transport;</p> <p>Selected contemporary directions of development of ergonomics: e.g.: designing means of mobility for persons with motor disabilities; specific examples of the application of ergonomics in transport;</p> <p>Detailed principles of product ergonomic designing in transport</p>		
<b>Basic bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Górska E.: Ergonomia, Wyd. Politechniki Warszawskiej, W-wa 2002</li> <li>2. Ergonomia produktu. Ergonomiczne zasady projektowania produktów przemysłowych, praca zbiorowa pod redakcją J. Jabłońskiego, Wydawnictwo Politechniki Poznańskiej, Poznań 2006</li> <li>3. Pacholski, L.: Ergonomia, Wydawnictwo Politechniki Poznańskiej, Poznań 1986</li> <li>4. Tytyk E.: Projektowanie ergonomiczne, Wydawnictwo Naukowe PWN, Warszawa-Poznań 2001</li> </ol>		
<b>Additional bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Słowikowski J.: Metodologiczne problemy projektowania ergonomicznego w budowie maszyn, Wydawnictwo Centralny Instytut Ochrony Pracy, Warszawa 2000</li> <li>2. Winkler T.: Komputerowo wspomaganie projektowanie systemów antropotechnicznych, WNT, Warszawa, 2005</li> <li>3. Cooper R.: Rehabilitation Engineering Applied to Mobility and Manipulation, Institute of Physics Publishing Bristol and Philadelphia, Bristol 1995</li> </ol>		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
1. Preparation for the lecture	1	
2. Participation in the lecture	15	
3. Fixing the content of the lecture	1	
4. Participation in consultations	1	
5. Preparation for the sentence	1	
6. Participation in passing the lecture	1	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	25	1
Contact hours	9	0
Practical activities	0	0