STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
(-)		**1010615231010618569**
Field of study: **Mechanical Engineering**	Profile of study (general academic, practical): **general academic**	Year /Semester: **2 / 3**
Elective path/specialty: **Motor Vehicles**	Subject offered in: **Polish**	Course (compulsory, elective): **obligatory**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time): **part-time**	
No. of hours: Lecture: **9** Classes: **9** Laboratory: **-** Project/seminars: **-**		No. of credits: **2**
Status of the course in the study program (Basic, major, other): **other**	(university-wide, from another field): **university-wide**	
Education areas and fields of science and art: **technical sciences**		ECTS distribution (number and %): **2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The student has a basic knowledge of vehicles construction and operation of its components as well as the basics of reliability.
2	**Skills**	Student is able to analyze and synthesize information, draw conclusions, formulate and justify opinions
3	**Social competencies**	Student is aware of the importance of rational use of vehicles in aspect of technical, economic and environmental

Assumptions and objectives of the course:

Develop the ability to formulate and solve problems of car use in terms of their reliability

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Student knows the terminology in the field of reliability - [K2A_W16]
2. Student distinguishes between forms of destruction of components of vehicles - [K2A_W13]
3. Student understands simple reliability models of vehicles - [-]
4. Student has a practical knowledge of the weak links of currently produced vehicles - [-]

Skills:

1. Student can identify the causes of functional disablement of the vehicle and evaluate the risks arising from its occurrence - [-]
2. Student correctly makes models the reliability of vehicle components - [K2A_U11]
3. Student correctly interprets exploitation data and can identified weakest point of the vehicle - [-]

Social competencies:

1. Student responsibly estimates resulting from vehicle disablement threat to the safety of people and the environment - [K2A_K02]
2. Student is able to communicatively discuss the issues of durability and reliability of the vehicle - [K2A_K06]
3. Student is open to acquiring new knowledge of the reliability of vehicles - [K2A_K01]

Assessment methods of study outcomes

The project of modeling the reliability of vehicles

Final test

Course description

The terminology in the field of reliability. Methods of destroy of vehicles elements. Empirical models of reliability of vehicles. Analysis of the durability and reliability of vehicles. Identification of weak links of currently produced vehicles. Identification of the causes of functional disablement of the vehicle and estimating the risks of its occurrence. Influence of operating conditions on the reliability of vehicles.

Basic bibliography:

1. Moubray J.: Reliability centered maintenance, Industrial Press Inc, 2000

2. Kumar U.D., Crocer J.,Knezewic J.,El-Haram M.: Reliability, Maintenance and Logistic Support, Kluwert Academic Publishers, 2000

3. O. Connor P.D.T., Newton D., Bromley R.: Practical Reliabillity Engineering, Jonn Willey and Sons, LTD, 2001

4. Hebda M.: Eksploatacja samochodów. Wydawnictwo Instytutu Technologii Eksploatacji, Radom 2005

5. Gronowicz J.: Eksploatacja techniczna I utrzymanie samochodów. Wydawnictwo Uczelniane Politechniki Szczecińskiej, Szczecin 1997

6. Smalko Z.: Podstawy eksploatacji technicznej pojazdów. Warszawa, Wydawnictwo Politechniki Warszawskiej, 1987

Additional bibliography:

1. Niziński S.:Diagnostyka samochodów osobowych i ciężarowych, Dom wydawniczy Bellona, Warszawa 1999r

Result of average student's workload

Activity	Time (working hours)
1. Lecture participation	15
2. Project	4
3. Consultation	1
4. Preparation for assessment	5

Student's workload

Source of workload	hours	ECTS
Total workload	40	2
Contact hours	30	2
Practical activities	5	0