STUDY MODULE DESCRIPTION FORM

Name of the module/subject **The Transportation Systems Diagnostic**		Code **1010612211010620369**
Field of study **Transport**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 1**
Elective path/specialty **Railway Transport**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **full-time**	

No. of hours				No. of credits
Lecture: **1** Classes: **1** Laboratory: **-** Project/seminars: **-**				**2**

Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**

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**	Students have elementary knowledge about structure of transport configurations and systems, principles of their operational use and physics of phenomenons occurring in mechanical objects.
2	**Skills**	Student can solve particular problems occurring in technical systems.
3	**Social competencies**	Student can cooperate in a group and define priorities important for solving appointed problems.

Assumptions and objectives of the course:

The aim of this subjects it to get students acquainted with theoretical and practical problems connected with diagnostics of transport configurations and systems, solutions to problems connected with assessment of their technical condition and principles of using diagnostics in service systems.

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

Knowledge:

1. Students have extended knowledge about technical diagnostics of transport configurations and systems and methods and modes of solving problems connected with assessment of their technical condition and prognosticating. - [[K2A_W22]]

2. Students have extended knowledge about conditions of diagnosing transport configurations and systems. - [[K2A_W22]]

Skills:

1. Students can find information in literature, in the internet, data bases and other sources. - [[K2A _U01]]

2. Students can self-educate using modern didactic tools. - [[K2A _U06]]

Social competencies:

1. Students are aware of necessity and know ways of continuous training, are aware of necessity to gain new knowledge for professional development. - [[K2A _K01]]

2. Students can define tasks and priorities of their realization for themselves and a team. - [[K2A _K05]]

3. Students can identify and solve problems connected with practiced profession, among others, problems connected with technology and environment. - [[K2A _K06]]

Assessment methods of study outcomes

Written exam, pass-fail test

Course description
Introduction to questions about diagnostics of organization and management systems. Diagnostic and prognosticating methods of improving organization and management systems. Techniques of transport systems control: strategic control, controlling. Introduction to questions about technical diagnostics: the tasks of diagnostics in transport configurations and systems, diagnostic processes and signals as sources of information about technical condition of systems. Classification of technical conditions of objects and systems, critical values of symptoms. The space of conditions of objects and signals. Diagnostics of systems: running system, combustion engine, electric machines and supporting appliances. Diagnostics of configurations and systems of protecting and steering railway transport. Service methods of transport configurations and systems using technical diagnostics.

Basic bibliography:

1. J. Marciniak. Diagnostyka techniczna kolejowych pojazdów szynowych. WKiŁ, Warszawa 1982.

2. M. Hebda, S. Niziński, H. Pelc ? Podstawy diagnostyki pojazdów mechanicznych. WKiŁ, Warszawa 1980.

3. C. Cempel, F. Tomaszewski ? Diagnostyka Maszyn. Zasady ogólne, przykłady zastosowań. M.C.N.E.M.T, Radom 1992.

Additional bibliography:

1. B. Żółtowski ? Podstawy diagnostyki maszyn. Wydawnictwo Uczelniane Akademii Techniczno-Rolniczej, Bydgoszcz 1996.

Result of average student's workload

Activity	Time (working hours)
1. Preparation to the lecture	0
2. Participation in the lecture	15
3. Consolidation of the lecture content	1
4. Consultation about lecture	1
5. Preparation to the exam	8
6. Participation in the exam	2
7. Preparation to the classes	1
8. Participation in the classes	15
9. Consolidation of the classes content	2
10. Consultation about the classes	1
11. Preparation to pass-fail test	5
12. Participation in pass-fail test	2

Student's workload

Source of workload	hours	ECTS
Total workload	52	2
Contact hours	36	1
Practical activities	0	0