STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Modeling of Exploitation Systems		**1010612221010610504**
Field of study: **Transport**	Profile of study (general academic, practical): **(brak)**	Year /Semester: **1 / 2**
Elective path/specialty: **Food Industry Machines and Refrigeration**	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: Lecture: **2** Classes: **2** Laboratory: **-** Project/seminars: **-**		No. of credits: **3**
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		ECTS distribution (number and %)

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of reliability, vehicles construction and diagnosis.
2	**Skills**	Student can perform simple vehicle?s diagnostics operations.
3	**Social competencies**	Student is able to think and act entrepreneurially.

Assumptions and objectives of the course:

Developing the ability to design and handling equipment according to the recommendations of the reliability standards.

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

Knowledge:

1. Student has detailed knowledge of reliability. - [K2A_W16]

Skills:

1. Student can use learned mathematical theories to create and analyze models. - [K2A_U18]

Social competencies:

1. Student understands the need for continuous learning. - [K2A_K01]

Assessment methods of study outcomes

Examination of the lecture's knowledge. Control paper of the practice part.

Course description

Technical exploitation focused on reliability. Use. Value in use of the device, the main criteria for the assessment of values: safety and environmental protection, compliance with technical features, economy. Technical condition of the device during use. Handling strategies. Statistical basis for selection of handling strategies. Logical and mathematical basics of use. Fundamentals of system reliability analysis using flowcharts, trees fitness and unfitness. Functional reliability. Disablement effects analysis. Risk. Principles of safety technology. Technical basis for selection of handling strategies. Multi-factorial experiments planning in sustainability research.

Basic bibliography:

1. PN?JEC 300-3-1, PN-EN 60300-2, PN-JEC 60300-3-9: - Zarządzanie niezawodnością
2. PN-JEC 706-1 (do 5): - Przewodnik dotyczący obsługiwalności urządzeń.
3. PN-JEC 812: Procedura analizy rodzajów i skutków uszkodzeń (FMEA, FMECA).
4. PN-JEC 1025: - Analiza drzew niezdatności
5. PN-JEC 1078: - Metoda schematów blokowych niezawodności

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. Participation in lecture	30
2. Participation in seminar	30
3. Consultations	6
4. Participation in passing exam	2
5. Exam preparedness	5

Student's workload

Source of workload	hours	ECTS
Total workload	73	3
Contact hours	68	3
Practical activities	0	0