

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Safety of exploitation of technical devices</b>		Code <b>1011101261011124359</b>
Field of study <b>Safety Engineering - Full-time studies - First-</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>3 / 6</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>elective</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>15</b> Classes: <b>30</b> Laboratory: <b>-</b> Project/seminars: <b>30</b>		No. of credits <b>6</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>		
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<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Student has a basic knowledge of the technology
2	<b>Skills</b>	The student has the basic skills of design.
3	<b>Social competencies</b>	The student is aware of the role and importance of safety exploitation regarding technical equipment in order to ensure the work safety
<b>Assumptions and objectives of the course:</b>		
Familiarizing students with the basic issues related to the safe introduction into the exploitation of technical equipment and concepts of their safe use in the work environment.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Has systematized, theoretically supported general knowledge of technical safety - [K1A_W08] 2. Has basic knowledge of products, equipment, objects and technical systems? lifecycle - [K1A_W19] 3. Knows the basic issues related to the reliability and safety of operation of technical equipment, facilities and technical systems - [K1A_W20]		
<b>Skills:</b>		
1. Can acquire, integrate, interpret data from literature, database or other properly matched sources, both in English or other foreign language accepted as an international language of communication within Safety Engineering, as well as to draw conclusions, formulate and justify opinions - [K1A_U01] 2. Can create, both in English and Polish language, a well- documented report of problems within Safety Engineering, which present the results of their own research - [K1A_U03]		
<b>Social competencies:</b>		

1. Understands the need and knows means how to self-study ( first, second and third cycle studies, postgraduate studies, qualification courses)- improving professional, personal and social competence; can argue the need to learn for the whole life - [K1A\_K01]
2. Is aware of the relevance of the study and understands non-technical aspect as well as consequences of engineering activity, including its impact on environment and taken responsibility of his decisions - [K1A\_K02]
3. Is fully aware of the responsibility that he has taken for his own work and expresses readiness to comply with the rules of team work as well as takes responsibility for mutually realized and completed tasks - [K1A\_K03]
4. Can determine some causal relationships in the process of targets implementation and rank pertinence of alternative or competitive tasks - [K1A\_K04]

### Assessment methods of study outcomes

**Formative assessment:**

Classes: on the basis of a report in a class,

Projects: on the basis of work progress

Lectures: on the basis of oral answers of the questions connected with the covered lecture content from current and previous lectures.

**Collective assessment:**

Classes: average of the grades achieved report preparation

Projects: assessment of the project

Lectures: written test, in which at least one answer in correct (scored 0,1) or written answers to open questions (scored 0-3); Credits will be given after achieving at least 31% of points.

### Course description

Mechanical hazards, their impact on the safety of employees. The operational safety of machinery and technical equipment. Machines and technical equipment exploitation within the safety system. The producers, employers and employees? tasks. The requirements of the machine directive. The requirements of the directives related to the machine directive. The assessment process of conformity and the CE marking. Minimum requirements for safety-related machines exploitation. General requirements regarding safety of machines exploitation. The aim of the technical documentation and normalization in the process of design and exploitation regarding machinery and technical equipment. Market surveillance system. The role and tasks of the UDT in the process of ensuring the safety of exploitation.

**Basic bibliography:**

1. Pleban D., Certyfikacja wyrobów, maszyn i urządzeń na spełnienie wymagań bezpieczeństwa (Certification of products, machinery and equipment to meet security requirements), w: Koradecka D., Nauka o pracy - bezpieczeństwo, higiena, ergonomia, t. 2: Prawna ochrona pracy, Centralny Instytut Ochrony Pracy, Warszawa, 2000
2. Podgórski D., Ocena zgodności maszyn oraz środków ochrony zbiorowej i indywidualnej z wymaganiami bezpieczeństwa pracy i ochrony zdrowia (The conformity assessment of machinery, means of collective and individual protection, with the requirements of health and safety), seria: Bezpieczeństwo i ochrona człowieka w środowisku pracy, z. 15, Centralny Instytut Ochrony Pracy, Warszawa, 1998
3. Tomaszewski Z., Bezpieczeństwo wyrobów oraz ich zgodność ze standardami Unii Europejskiej (Safety of products and their compliance with the standards of the European Union), Wydawnictwo Politechniki Poznańskiej, Poznań, 2002
4. Tomaszewski Z., Wprowadzenie do techniki (Introduction to technology), Wydawnictwo Politechniki Poznańskiej, Poznań, 2002

**Additional bibliography:**

1. Tytyk E., Ergonomia - pojęcia podstawowe (Ergonomics- basic concepts), w: Koradecka D., Nauka o pracy - bezpieczeństwo, higiena, ergonomia, t. 1, Centralny Instytut Ochrony Pracy, Warszawa, 2000

### Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	15
2. Participation in classes	30
3. Participation in project classes	30
4. Preparation for classes	15
5. Preparation for written test (based on lectures)	7
6. Preparation for a project	20
7. Overview of the credits	2
8. Preparation of reports (based on classes)	6

### Student's workload

<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	125	5
Contact hours	77	3
Practical activities	60	2