STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Human Reliability	**1011105221011126463**

Field of study	Profile of study (general academic, practical)	Year /Semester
Safety Engineering - Part-time studies - Second-	**(brak)**	**1 / 2**
Elective path/specialty	**Subject offered in:**	**Course (compulsory, elective)**
Ergonomics and Work Safety	**Polish**	**elective**

Cycle of study:	Form of study (full-time,part-time)
Second-cycle studies	**part-time**

No. of hours	No. of credits
Lecture: **10** Classes: **12** Laboratory: **-** Project/seminars: **-**	**3**

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

Education areas and fields of science and art	ECTS distribution (number and %)
social sciences	**3 100%**

Responsible for subject / lecturer:

dr inż. Małgorzata Sławińska
email: malgorzata.slawinska@put.poznan.pl
tel. 665-3438
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of technical objects exploitation and management, ergonomics and cognitive psychology.
2	**Skills**	Organization of work in accordance with the requirements of ergonomics, health and safety regulations and environmental protection.
3	**Social competencies**	Openness to change, collaboration in a team, quality evaluation of the allocated tasks.

Assumptions and objectives of the course:

Getting acquainted with the basic theoretical and practical aspects of rational development of optimal working conditions. Gaining the ability to apply the concept of distributed cognition in the design, and the use of technology associated with the working process.

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

Knowledge:

1. . Student knows the concept of reliability, reliability in terms of system approach, creating measures of human reliability, psychological capacity of a man as a basis for foreseeing human errors, applying in practice the knowledge of human reliability, the psychological concept of controlling difficult situations, states of the man and his reliability - [K2A_W11]

2. The student knows the concept of man and the world of values, main ethical categories, the role of the man in ensuring reliability, human-technical object system, the algorithm of system analysis in terms of human factor, balance control between the opportunities and requirements, The use of a theoretical approach to cognitive psychology - cognitive ergonomics - [K2A_W28]

Skills:

1. Student 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 - [K2A_U1]

2. The student 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 - [K2A_U3]

3. The student can prepare and give oral presentation relating to detailed issues within the realm of Safety Engineering in Polish and other foreign language - [K2A_U4]

4. The student has self-study ability and comprehends it - [K2A_U5]

5. The student can apply information-communicative techniques to deal with tasks that are typical of engineering activity - [K2A_U7]

6. The student can, while formulating and solving engineering tasks, discern their systemic and non-technical aspects and also socio-technical, organizational and economic approach - [K2A_U10]

7. The student can come up with a suggestion how to make use of state-of-the art technology (techniques and technology) within products design - [K2A_U12]

8. The student has got the preparation that is indispensable to be able to work in an industrial environment and also knows safety rules connected with a given work along with the ability to impose their use in practice - [K2A_U13]

9. The student , according to predetermined specifications, design and implement a simple device, object, system or process that is typical of Safety Engineering, by using methods, techniques and tools and solve complex engineering tasks that are characteristic of Safety engineering (including uncommon cases which have exploratory component) - [K2A_U18]

Social competencies:

1. Student 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 argument the need to learn for the whole life - [K2A_K1]

2. The student 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 responsibility for mutually realized and completed tasks - [K2A_K3]

3. The student can determine some causal relationships in the process of targets implementation and rank pertinence of alternative or competitive tasks - [K2A_K4]

4. The student is aware of his social role as a university graduate. He is especially conscious of the need to formulate and pass on to the society, especially by means of media, information and opinions connected with technological advancements and other aspects of engineering activity - [K2A_K7]

Assessment methods of study outcomes

Formative assessment:

Classes: current/ongoing evaluation of tasks which understanding is checked on the basis of written tests

Lectures: evaluations based on questions relating to the presented materials during the previous lectures

Collective assessment:

Classes: credits will be given on the basis of an average of partial grades within the formative assessment

Lectures: test-based written exam. One can write an exam only if he has been given credits (classes)

Course description

The concept of reliability, reliability in terms of system approach, creating measures of human reliability, psychological capacity of a man as a basis for foreseeing human errors, applying in practice the knowledge of human reliability, the psychological concept of controlling difficult situations, states of the man and his reliability

The concept of man and the world of values, main ethical categories, the role of the man in ensuring reliability, human-technical object system, the algorithm of system analysis in terms of human factor, balance control between the opportunities and requirements, The use of a theoretical approach to cognitive psychology - cognitive ergonomics

Basic bibliography:

1. . Psychologia pracy i organizacji (The psychology of occupation and organization), Chmiel N. (red.), Gdańskie Wyd. Psychologiczne, Gdańsk, 2003

2. Diagnostyka maszyn (The diagnosis of machines), red. Cempel Cz., Tomaszewski F., Międzyresortowe Centrum Naukowe Eksploatacji Majątku Trwałego, Radom, 1992

3. Eksploatacja systemów technicznych (Exploitation of technical systems) , Kaźmierczak J., Wydawnictwo Politechniki Śląskiej, Gliwice, 2000

4. Niezawodność człowieka w pracy (Reliability of a man at work), Ratajczak Z., PWN, Warszawa, 1988

5. Niezawodność człowieka w interakcji z procesem przemysłowym (Reliability of a man in interaction with an industrial process), Sławińska M., WPP, Poznań 2012

Additional bibliography:

1. Diagnostyka zautomatyzowanych procesów przemysłowych (Diagnosis of automated industrial processes), Kościelny J.M., Akademicka Oficyna Wydawnicza EXIT, Warszawa, 2001
2. . Ergonomia systemów zautomatyzowanych (Ergonomics of automated systems), Sławińska M., WPP, Poznań, 2008
3. . Psychologia poznania (The psychology of cognition), Maruszewski T., Gdańskie Wydawnictwo psychologiczne, Gdańsk, 2001

Result of average student's workload

Activity	Time (working hours)
1. Lecture	10
2. Classes	12
3. Consultation	8
4. Final credits- written form	2
5. Preparation for classes	10
6. Preparation for the final credits	10

Student's workload

Source of workload	hours	ECTS
Total workload	52	3
Contact hours	32	2
Practical activities	10	1