STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Design of Information Processes		**1011102221011126445**
Field of study	Profile of study (general academic, practical)	Year /Semester
Safety Engineering - Full-time studies - Second-	**(brak)**	**1 / 2**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Work Safety Management	**Polish**	**elective**
Cycle of study:	Form of study (full-time,part-time)	
Second-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **15** Classes: **30** Laboratory: **-** Project/seminars: **15**		**5**
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 %)

Responsible for subject / lecturer:

dr inż. Małgorzata Sławińska
email: malgorzata.slawinska@put.poznan.pl
tel. 61 665 34 38
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The student knows selected methods and description tools, including the techniques of data acquisition, modelling social structures and processes within them
2	**Skills**	The student has the ability to independently propose specific solutions to a particular problem and carry out the procedures for taking decisions in this area
3	**Social competencies**	Student is able to independently and critically complement the knowledge and skills, extended to an interdisciplinary dimension

Assumptions and objectives of the course:

-Providing students with the knowledge of the nature and development of the concept of ergonomics; motivating the students to critically assess the individual conditions of interaction with the computer system.

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 classes of information processes, as well as the analysis of a worker? cognitive functioning - [K2A_W14]

3. The student knows the ways of overcoming some technical contradictions, analysis of the ways to overcome the technical problems on the basis of an algorithm that is used for inventive problem solving tasks, Knows the principles of modelling in decision-making processes, including the psychological factors of cognitive processes - [K2A_W24]

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_U01]

2. The student can apply various techniques in order to communicate in occupational environment and other environments- - [K2A_U2]

3. 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]

4. 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]

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

6. The student can make use of analytic, simulation and experimental methods to formulate and solve engineering tasks - [K2A_U9]

7. 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]

Social competencies:

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

Assessment methods of study outcomes

Formative assessment:

Laboratories: on the basis of a written problem task,

Projects: on the basis of a written report that contains gradual development stages in a system analysis of an operator-information system

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

Collective assessment:

Laboratories: average of the grades achieved during problem solving tasks,

Projects: collective assessment of the project and presentation,

Lectures: written test, which is based on 50% answers related to the selection of given answers and open questions. Credits will be given after achieving at least 31% of points. Answers are scores as0, 0,5 or 1

Course description

Fundamental problems of human integration with the technology, the essence of ergonomics. Functional structure of the technical system. Ergonomic analysis of a complex technical system. System load. Coupling system: man- technical elements of the system, characteristics of the input/output factors. Technology design with regard to knowledge of the possibility of man. The formulation of the ergonomic requirements in the process of design, concerning information processes. Tools of ergonomic diagnosis. Modelling of the decision-making processes, including the psychological factors of cognitive processes. Classes of information processes. Analysis of worker?s cognitive function. Practical application of knowledge about human unreliability. Ergonomic elements development of the operator?s workplace. Optimization of an ergonomic dialogue: man-technical subsystem. Research plan that verifies the stages of ergonomic modification in a system.

Basic bibliography:

1. Diagnostyka zautomatyzowanych procesów przemysłowych (The diagnostics of automated industrial processes), Kościelny J.M., Akademicka Oficyna Wydawnicza EXIT, Warszawa, 2001

2. Niezawodność człowieka w interakcji z procesem przemysłowym (Human reliability in interaction with the industrial process), Sławińska M., WPP, Poznań 2012

3. Zarządzanie jakością użytkową w przedsięwzięciach informatycznych (Quality management in IT enterprises). Sikorski M., Wyd. Politechniki Gdańskiej, Gdańsk 2000

Additional bibliography:

1. Ergonomia systemów zautomatyzowanych (Ergonomics of automated systems), Sławińska M., WPP, Poznań, 2008

2. Metody wytwarzania oprogramowania (Software development methods), Szejko S. (red.), Wydawnictwo MIKOM, Warszawa, 2002

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. Participation in lectures	15
2. Participation in classes	30
3. Participation in project classes	15
4. Preparation for laboratory classes	6
5. Preparation for project tasks	10
6. Preparation for written credits (based on lectures)	6
7. Overview of results (lectures)	2
8. Overview of results (classes)	2
9. Presentation of the semester project	2

Student's workload

Source of workload	hours	ECTS
Total workload	88	5
Contact hours	62	3
Practical activities	47	2