STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Macroergonomics		**1011102231011120211**
Field of study	Profile of study (general academic, practical)	Year /Semester
Safety Engineering - Full-time studies - Second-	**(brak)**	**2 / 3**
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	**full-time**	

No. of hours				No. of credits
Lecture: **15**	Classes: **30**	Laboratory: **-**	Project/seminars: **15**	**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 %)
technical sciences	**3 100%**
Technical sciences	**3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has a basic knowledge within ergonomic issues of the third-generation and management.
2	**Skills**	Student is able to properly analyze the causes and course of ergonomic phenomena as well as to interpret the results of these observations.
3	**Social competencies**	Student is able to identify priorities for implementation of specified by himself or others tasks. The student is able to interact in a group.

Assumptions and objectives of the course:

Basic knowledge within ergonomic issues of the third-generation and management.

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

Knowledge:

1. Student has expanded knowledge of macroergonomics. - [K2A_W03]
2. Student knows the rules and concepts relating to the development of macroergonomic zones of business cooperation. - [K2A_W034]

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. 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. Student has self-study ability and comprehends it - [K2A_U5]

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

5. 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]

6. 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]

7. 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. 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. Student can 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:

Projects: on the basis of assessment of particular project elements

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

Collective assessment:

Laboratories: on the basis of grades from tests and an assignment

Projects: on the basis of project work evaluation

Lectures: on the basis of the final exam results

Course description

Three stages of the evolution of ergonomics-macroergonomics. Macroergonomic paradigm regarding the development of an area describing the human factor in technology. Macroergonomic information system (valuing and decomposition of the criteria. Formal synthesis of evaluations . The credibility of the macroergonomic information. A criteria problem in a macroergonomic design (the complexity of relationships in macroergonomic systems. Basic methodological assumptions of non-traditional design information). Macroergonomic diagnostics (Model. Concept. The issue of the diagnostic conditions.Focus list). Intelligent macroergonomic system. The development of macroergonomic zones of business cooperation.

Basic bibliography:

1. Macroegonomics and macroergonomic designing: supplementary materials., Jasiak A., Misztal A., WPP, Poznań 2004.

2. Human factor criterion in manufacturing systems designing., Jasiak A., Poznań 1993.

3. Quality of work environment and its influence on human functioning in technical system., Wasińska K., Wyższa Szkoła Pedagogiczna, Zielona Góra 1999.

4. Stress in work., Cooper C.L., Payne R. (red), PWN Warszawa 1987.

5. Economic- social aspects of ergonomics., Kowal E., Warszawa 2002.

6. Macroergonomics., Pacholski L., Jasiak A., Wyd. Politechniki Poznańskiej, Poznań , 2011.

7. Macroergonomics in designing of work systems and quality of life., Jasiak A., WPP, Poznań 2015.

Additional bibliography:

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 project classes	20
5. Preparation for written assignment (based on lectures)	15
6. Consultations	10
7. Exam	2
8. Overview of exam results	2

Student's workload		
Source of workload	**hours**	**ECTS**
Total workload	109	3
Contact hours	74	2
Practical activities	55	1