COURSE DESCRIPTION CARD - SYLLABUS

Course name
Modeling requirements for safety systems

Course

Field of study
Safety Engineering
Area of study (specialization)
Security and Crisis Management
Level of study
Second-cycle studies
Form of study
part-time

Year/Semester
2/3
Profile of study
general academic
Course offered in
Polish
Requirements
compulsory

Number of hours

Lecture
10
Laboratory classes
0
Other (e.g. online)
0
Tutorials
10
Projects/seminars
0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:
Anna Stasiuk-Piekarska, Ph.D., Eng.

e-mail: anna.stasiuk-piekarska@put.poznan.pl

Faculty of Engineering Management
Institute of Safety and Quality Engineering
ul. J. Rychlewskiego 2, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

The student has a basic knowledge of safety. He knows the selected safety systems. Understands system dependencies in organizations.

Course objective

Strengthening knowledge and acquiring skills in defining system stakeholders and shaping their requirements in the functioning of safety systems in the organization. Modeling of requirements for selected safety systems.

Acquisition of competences necessary to develop and organize safety systems.

Course-related learning outcomes

Knowledge

- knows issues related to the area of ergonomics and occupational safety (P7S_WG_03),

- knows design issues in relation to products and processes (P7S_WG_07),

- knows contemporary development trends and best practices in the field of safety systems (P7S_WK_02),

- knows the basic methods, techniques, tools and materials used to solve simple engineering tasks in the field of ergonomics and work safety using information technologies, information protection and computer support (P7S_WK_03),

Skills

- is able to properly select the sources and information derived from them, make an assessment, critically analyze and synthesize this information, formulate conclusions and comprehensively justify the opinion (P7S_UW_01),

- can use various techniques to communicate in a professional environment and in other environments, also in a foreign language (P7S_UW_02),

- is able to see and formulate systemic and non-technical as well as socio-technical, organizational and economic aspects in engineering tasks (P7S_UW_03),

- is able to use research, analytical, simulation and experimental methods to formulate and solve engineering tasks, also using information and communication methods and tools (P7S_UW_04),

- is able to prepare the necessary resources to work in an industrial environment and knows the safety rules associated with this work and is able to force their application in practice (P7S_UW_05),

- is able to perform a critical analysis of the way it functions and assess - in conjunction with Safety Engineering, existing technical solutions, in particular machines, devices, objects, systems, processes and services (P7S_UW_06),

Social competences

- is aware of the recognition of cause-and-effect relationships in achieving the set goals and ranking the importance of alternative or competitive tasks (P7S_KK_01),

- is aware of responsibility for own work and readiness to comply with the rules of teamwork and taking responsibility for jointly implemented tasks (P7S_KR_02).

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

- tutorials: assessment of reports on exercises performed and tasks to be carried out independently,

- lecture: short written form carried out on 7-8 lectures. Przemiot ends with an exam covering knowledge of the issues presented in the lecture.

Programme content

Lecture: Requirements management for the civil safety system - methods of identifying the needs, tasks, boundaries and objects of the civil safety system environment; the concept, essence and complexity of the problem of determining and managing requirements; project stakeholders and the need and essence of object-oriented modeling in determining system requirements. Business modeling of the safety system - context diagrams, diagrams of system use cases and their scenarios, modeling the structure and dynamics of the system's functioning. Modeling the implementation of information and decision-making processes of individual stages of safety management with computer support - context diagrams of the civil safety management subsystem. Subsystem use case diagrams and their scenarios. Modeling the structure and dynamics of functioning of the safety management subsystem with computer support. Determining the requirements for the civil safety system for a given map of safety threats in the area of its responsibility.Tutorials: selection and description of an enterprise having safety -related systems implemented or planning to implement them. Choice of three safety systems and their characteristics. Identification of stakeholders of systems functioning and identification of their requirements. Indication of the requirements relevant for the implementation and maintenance of the safety systems described. An attempt to model the implementation / modification in the functioning of systems with reference to milestones and taking into account control and improvement activities. Summary.

Tutorials: selection and description of an enterprise having safety -related systems implemented or planning to implement them. Choice of three safety systems and their characteristics. Identification of stakeholders of systems functioning and identification of their requirements. Indication of the requirements relevant for the implementation and maintenance of the safety systems described. An attempt to model the implementation / modification in the functioning of systems with reference to milestones and taking into account control and improvement activities. Summary.

Teaching methods

Lecture: information and conversation lecture based on multimedia presentation.

Tutorials: simulation method in conjunction with case study analysis.

Bibliography

Basic

1. Stabryła A. (red.) (2015), Metodologia projektowania systemów organizacyjnych przedsiębiorstwa, Wydawnictwo CH Beck, Warszawa.
2. Monkiewicz J., Gąsiorkiewicz L. (red.) (2010), Zarządzanie ryzykiem działalności organizacji, Wydawnictwo C.H. Beck, Warszawa.
3. Bugdol M., Jedynak P. (2012), Współczesne systemy zarządzania. Jakość, bezpieczeństwo, ryzyko, Wydawnictwo Helion, Gliwice.

Additional

1. Hamrol A., Mantura W. (2005), Zarządzanie jakością teoria i praktyka, Wydawnictwo Naukowe PWN, Warszawa.
2. Rączka M., Koncepcja "High Level Structure" w standaryzacji systemów zarządzania, http://www.ptzp.org.pl/files/konferencje/kzz/artyk_pdf_2015/T2/t2_0320.pdf.
3. Jasiulewicz-Kaczmarek M., Prussak W. (2012), Modele doskonałości w zarządzaniu jakością, Zarządzanie i Finanse, 3(10), 127-140, http://zif.wzr.pl/pim/2012_3_1_10.
4. Stasiuk-Piekarska A.K. (2015), Zarządzanie jakością jako wsparcie zarządzania ryzykiem, Zeszyty Naukowe Politechniki Poznańskiej. Seria: Organizacja i Zarządzanie, 68, 133-145.
5. Stasiuk-Piekarska A.K. , Wyrwicka M.K. (2015), Organising - still an important function of production management, Research in Logistics &Production, 5(2), 129-142.

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	3,0
Classes requiring direct contact with the teacher	20	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	40	2,0

[1] delete or add other activities as appropriate