

KARTA PRZEDMIOTU

Nazwa przedmiotu: Engineering workflow in industrial enterprise (ZIPOZ>NM2EWIIE19O)

Nazwa w języku polskim:

Nazwa w jęz. angielskim: Engineering workflow in industrial enterprise

Dane dotyczące przedmiotu:

Jednostka oferująca przedmiot: Wydział Organizacji i Zarządzania

Przedmiot dla jednostki: Politechnika Śląska

Domyślny typ protokołu dla przedmiotu:

ZAL

Język wykładowy:

angielski

Strona WWW:

<https://platforma.polsl.pl/roz/course/view.php?id=387>

Skrócony opis:

The aim of the subject is the acquisition of knowledge and skills by a student in the field of analysis and shaping workflow in industrial enterprise including the flow of people, technical means and information. The student will acquire knowledge about the factors affecting the effectiveness of workflow and will be able to recognize the cause-and-effect relationships between workflow efficiency and human factors. The student will learn the methods for workflow modeling and analyzing supported by audio-video tools and embedded into IT or ICT. The course also aims to shape the student's appropriate attitude characterized by their activity and independence in conducting research in the field of searching and applying modern solutions supporting the improvement of workflow in industrial enterprise, and also criticism, independence of thinking, decision-making, planning and organizational ability.

Opis:

Lectures:

1. Introduction to workflow. Definition, structure, workflow goals, factors influencing workflow in an industrial enterprise. A place and roles of people, technology and information in workflow.
2. Managing teamwork. Team competency matrix, team communication, the role of technical and nontechnical skills in teamwork.
3. Workflow identification and analysis methods. Observational methods, graphical representation of workflow. AV and IT tools in workflow mapping.
4. Workflow models. Modeling based on video recording, modeling based on activity analysis.
5. Ergonomics and OHS in terms of workflow analysis. Shaping the efficiency of workflow under human factor approach.

Project lessons:

The project includes a comprehensive work including development of workflow structure and its analysis based on selected process in industrial enterprise. The project includes the following elements:

1. Recognition of elements shaping the workflow structure.
2. Identification and description of the flow of people, technical means and information on the basis of recorded videos of sample parts of work processes.
3. Development of a competency matrix.
4. Development of a workflow model.
5. Workflow analysis based on the workflow model, including the identification of critical points affecting work efficiency.
6. Development of a set of improvement recommendations.
7. Comprehensive development of the work results.

Summary indexes:

- number of course hours and ECTS credits at the course with a direct participation of academic teachers or other persons running the course and supervising students; 20/0,67
- number of course hours and ECTS credits at the course related to the scientific activity conducted at the Silesian University of Technology in a discipline or in disciplines to which a field of study is assigned - in the case of studies with a general academic profile;
- number of course hours and ECTS credits at the course developing practical skills- in the case of practical studies;
- number of course hours conducted by academic teachers employed by the Silesian University of Technology as their primary workplace. 20/0,67

Number of course hours regardless of a teaching mode 20/0,67

Student's workload preparation for test 10/0,33

Student's workload making a project and presentation 24/0,8

The other 6/0,2

Total hours: 60

Number of ECTS credits allocated to a course: 2

The method and procedure for making up for arrears resulting from:

- student's absence from classes,

The student is obliged to make up for any arrears through participation in classes with another group (if possible), in consultations arranged by the lecturer or individually, using methods and techniques of independent knowledge acquisition.

- differences in study programmes of students transferring from another field of study, from another university or resuming studies at the Silesian University of Technology,

It is necessary for the student to participate in classes in the nearest possible cycle.

Literatura:

Scientific manuscripts (available in e-resources of Silesian University of Technology https://www.bg.polsl.pl/ebazy/listaebaz_s3.html):

1. Chirkin A.M., Belloum A.S.Z., Kovalchuk S.V., Makkes M.X. et al.: Execution time estimation for workflow scheduling. Future Generation

Computer Systems, Volume 75, October 2017, pp. 376-387.

2. Steckowych K., Smith M.: Workflow process mapping to characterize office-based primary care medication use and safety: A conceptual approach. Research in Social and Administrative Pharmacy, In press, corrected proof, Available online 12 June 2018.

3. Bartnicka J., Kściuk T.: Modelowanie procesów workflow w sali operacyjnej z zastosowaniem technologii informatycznych. W: Innowacje w zarządzaniu i inżynierii produkcji. T. 2. Pod red. Ryszarda Knosali. Opole : Oficyna Wydaw. Polskiego Towarzystwa Zarządzania Produkcją, 2016, s. 667-676.

4. Abollado J.R., Shehab E.: A Systems Approach for the Definition of Lean Workflows in Global Aerospace Manufacturing Companies, Procedia CIRP, Volume 70, 2018, pp. 446-450.

5. Bartnicka J.: Determinants of knowledge-based improving workflow and communication within surgical team. World Acad. Sci. Eng. Technol., Int. J. Med. Health Biomed. Bioeng. Pharm. Eng. [online] 2013 vol. 7 no. 11, pp. 687-692.

Monographs (available in the Library of Silesian University of Technology <https://opac.bg.polsl.pl/>):

1. Bartnicka J.: Doskonalenie procesów pracy w organizacji szpitalnej. Wydaw. Politechniki Śląskiej, Gliwice 2020.

2. Kabiesz P. Wpływ czynników ergonomicznych i workflow na efektywność procesów produkcyjnych, 2022. Rozprawa doktorska.

3. McCabe T.P., Hanson M.A., Robertson S.A. (eds.): Contemporary ergonomics. Boca Raton ; London ; New York : CRC Press, 2017.

Scientific papers:

1. Joanna Bartnicka: Management of surgical workflow - an observation-based assessment study. W: Business and non-profit organizations facing increased competition and growing customers' demands. Proceedings of the 17th Conference of Scientists and Business People, Tomaszowice, Poland, 18-19 June 2018. Ed. by Adam Nalepka and Anna Ujwary-Gil. Nowy Targ : Foundation for the Dissemination of Knowledge and Science "Cognitione", 2018.

2. Partrycja Kabiesz, Joanna Bartnicka: Ergonomic and workflow study of sausage production process in the context of manual transport tasks. W: MAPE 2018. XV International Conference Multidisciplinary Aspects of Production Engineering, 05-08 September 2018, Zawiercie, Poland.

Conference proceedings. Vol. 1, iss. 1.

3. Joanna Bartnicka, T. Kściuk: Modelowanie procesów workflow w sali operacyjnej z zastosowaniem technologii informatycznych. W: Innowacje w zarządzaniu i inżynierii produkcji. T. 2. Pod red. Ryszarda Knosali. Opole : Oficyna Wydaw. Polskiego Towarzystwa Zarządzania Produkcją, 2016, s. 667-676.

4. Joanna Bartnicka: Determinants of knowledge-based improving workflow and communication within surgical team. World Acad. Sci. Eng. Technol., Int. J. Med. Health Biomed. Bioeng. Pharm. Eng. [online] 2013 vol. 7 no. 11. s. 687-692.

Efekty uczenia się:

Knowledge: a student knows and understands

K2A_W13 fundamental dilemmas of contemporary civilization, in particular related to the development of technology (Lecture, Project)

Skills: a student can

K2A_U07 formulate and test hypotheses related to simple research problems related to the field of study management and production engineering (Lecture, Project)

K2A_U012 communicate on specialist topics with diverse groups of recipients, as well as conduct a debate, present and justify different opinions and positions (Lecture, Project)

K2A_U13 to use a foreign language at the B2 + level of the European System of the Description of Language Education and specialist terminology related to the field of study management and production engineering (Lecture, Project)

Social competences: a student is prepared to

K2A_K02 recognition of the importance of knowledge in solving cognitive and practical problems and consulting experts in the event of difficulties in solving the problem (Lecture, Project)

Metody i kryteria oceniania:

Lecture:

The final grade is based on quiz outcome. Positive evaluation when student obtains a minimum of 50% of the number of points possible to get.

Project lessons:

The grade is based on written team project.

Przynależność do grup przedmiotów w cyklach:

Opis grupy przedmiotów	Cykl pocz.	Cykl kon.
Przedmioty obowiązkowe ZiIP niestacjonarny II stopnia, sem 2, 20/21 (ZIPOZ>NM-2-19-PO)	2020/2021-Z	
Przedmioty obowiązkowe- ZiIP niestacjonarny II stopień, sem 2, 20/21-LETNI (ZIPOZ>NM-2-19-O)	2020/2021-L	

Punkty przedmiotu w cyklach:

<bez przypisanego programu>

Typ punktów	Liczba	Cykl pocz.	Cykl kon.
Europejski System Transferu Punktów (ECTS)	2	2020/2021-Z	