COURSE DESCRIPTION CARD - SYLLABUS

Course name
Project management [S2IBiJ1>ZP]

Course

Field of study
Safety and Quality Engineering

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
15

Other
0

Tutorials
15

Projects/seminars
0

Number of credit points

4,00

Coordinators

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Lecturers

Prerequisites

The student has structured and theoretically based knowledge and knows the facts and phenomena characteristic of management and quality science, mechanical engineering and safety engineering. Can properly select sources, including literature, and information derived from them, as well as make an assessment, critical analysis, synthesis and creative interpretation of this information, formulate conclusions and comprehensively justify the opinion during the presentation of the results.

Course objective

Sharing knowledge about the premisses for the implementation of pro-development changes as well as skills and competences in the field of pro-development project management. Preparation of the role of project manager.

Course-related learning outcomes

Knowledge:
1. Student knows in-depth the principles and rules of management, in particular project management characteristic of safety engineering, quality, ergonomics and occupational safety and crisis management [K2_W06].

2. Student has structured and theoretically founded knowledge in the field of computer-aided project management systems [K2_W07].

Skills:
1. Student is able to use methods and tools for solving complex and unusual problems as well as advanced information and communication techniques characteristic of the professional environment related to security management in organizations [K2_U02].
2. Student is able to select and apply computer-aided tools for solving problems characteristic of security management in organizations [K2_U08].
3. Student is able to implement the assumptions of project management, including planning activities, scheduling, defining goals and specific tasks, criteria for their achievability and building project teams, identifying resources and determining the methodology of control at various stages of the project life cycle [K2_U09].

Social competences:
1. Student is critical of his knowledge, is ready to consult experts when solving cognitive and practical problems related to security management in organizations [K2_K01].
2. Student is able to plan and manage business ventures [K2_K04].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:
- presence and activity during classes, results of solved cognitive tasks, participation in discussions.
Summative assessment:
- written test result (containing 4-5 open problem questions);
- independent execution of the indicated cognitive task (computer-assisted project) and its presentation in the forum of the group.
Grading scale in accordance with part C of the Regulations of First and Second Degree Studies adopted by the Academic Senate of the Poznań University of Technology.

Programme content

: Project management systems in a strategic context. The problem of the organization's readiness for change and attitudes towards change. Project management. Principles of project portfolio management. Opportunity filter elements. Initiating the project Assessment of the profitability of implementation and preliminary determination of project budgets. Typology of projects (according to size, complexity, area, task complexity and social environment). Determining the requirements and conditions for project implementation and specifying the project goal.
Feasibility analysis. Project outline. Project management methodologies (management (Prince 2, PMBok), production (RUP, MSF), adaptive/agile (XP, SCRUM, XPrince), their advantages and disadvantages).
Project organization. Discussion of the principles of team formation
project, creating its structure, the role of the project manager and possible ways of integrating the team into the structure of the company.
Project planning. Work Breakdown Structure (WBS). Resource planning. Methods for estimating the duration and costs of project tasks. Project network diagram. Network methods (CPM, PERT,
MPM). Critical path. Project schedule (Gantt chart). Indication of the possibility of using computer-aided project management. Risk analysis and countermeasure plans
interference. Project implementation and control. Project controlling - Efficiency analysis (various aspects) and introducing changes.
HR and ethical aspects in project management. Communication problems in project management. Project closure - typical activities, delivery and acceptance protocol.

Course topics

Project management systems. Project initiation. Design organization. Typology of projects, Determining the requirements and conditions of project implementation and specifying the purpose of the project. Feasibility study. Project outline. Project management methodologies. Creating a project team, creating its structure and integrating the team into the structure of the company. Project planning. Structure of the division of tasks. Resource Planning. Methods of estimating the duration and costs of project tasks.

Project network diagram. Network methods (CPM, PERT, MPM). Critical path. Project schedule (Gantt chart). The use of a computer program supporting project management. Risk analysis and anti-disruption plans. Project implementation and control. Project controlling - Analysis and introduction of changes. HR aspects in project management. Closing the project.

Teaching methods

Problem lecture or seminar, work with a book. The lecture is conducted using distance learning techniques in a synchronous mode. Acceptable platforms: eMeeting, Zoom, Microsoft Teams. Laboratory exercises - solving cognitive tasks (project preparation) with the use of IT support.

Bibliography

Basic:
1. PMBOK® Guide - 7th Edition, Pennsylvania, 2021
2. Trocki M. (2017). Metodyki i standardy zarządzania projektami. Warszawa: PWE S.A.
3. Wyrwicka M., Zarządzanie projektami, Wyd. Politechniki Poznańskiej, Poznań 2011.
4. Wyrwicka M.,Zarządzanie projektowe [w:] Elementy inżynierii logistycznej (red.) M. Fertsch, Biblioteka Logistyka Wyd. ILiM Poznań 2017, s.53-74.
5. Wysocki R., Efektywne zarządzanie projektami. Tradycyjne, zwinne, ekstremalne, Wyd. Helion, Gliwice 2013.

Additional:
1. Głodzieński E., Efektywność w zarządzaniu projektami. Wymiary, koncepcje, zależności, PWE Warszawa 2017
2. Prussak W. Wyrwicka M., Zarządzanie projektami, Zachodnie Centrum Organizacji, Poznań 1997
3. Shenhar A.J., Dvir D., Nowe spojrzenie na zarządzanie projektami. Sukces wzrostu i innowacji dzięki podejściu romboidalnemu, Wyd. APN Promise, Warszawa 2008
4. Wyrwicka M., Niektóre uwarunkowania efektywnej realizacji projektów. [w:] Zeszyty Naukowe Politechniki Poznańskiej, seria Organizacja i Zarządzanie, 2000 Nr 29, s. 113-118;
5. Trocki M. (2012). Nowoczesne zarządzanie projektami. Warszawa: PWE S.A.
6. Kendrick T., The Project Management Tool Kit: 100 Tips and Techniques for Getting the Job Done Right, AMACOM, 2010.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	45	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	55	2,00