



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Management and financing of scientific research and R&D projects [N2AiR1>OIFBN]

Course

Field of study	Year/Semester
Automatic Control and Robotics	2/4
Area of study (specialization)	Profile of study
Intelligent Control Systems	general academic
Level of study	Course offered in
second-cycle	polish
Form of study	Requirements
part-time	compulsory

Number of hours

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

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic and in-depth knowledge in the field of robotics, the ability to critically browse the sources, awareness of the need for research work, language competences corresponding to the B2 level according to the description of the language proficiency level (CEFR).

Course objective

Participation of students in scientific research and R&D activities, and providing students with basic knowledge on the organization and financing of scientific research and R&D projects. Developing students' ability to formulate and solve problems in scientific research and prepare applications for research funding. Shaping social competences necessary in research and development, teamwork skills, work organization and time management.

Course-related learning outcomes

Knowledge

K2_W14 has the knowledge necessary to understand the economic, legal and social aspects of engineering activities and the possibility of applying them in practice; K2_W15 has knowledge of running a business, engineering project management and quality management;

Skills
K2_U7 has language skills in the field of automation and robotics, in accordance with the requirements set out for the B2 + level of the European System for the Description of Language Education; K2_U18 is able to make a preliminary economic analysis of undertaken engineering activities; K2_U24 is able to manage the work of the team, is able to lead a team and is able to estimate the time needed to complete the assigned task; is able to develop a work schedule and carry out tasks ensuring meeting deadlines;

Social competences
K2_K5 is ready to think and act in an entrepreneurial way; K2_K6 is aware of the social role of a technical university graduate and understands the need to formulate and transmit to the society (in particular through the mass media) information and opinions on the achievements of automation and robotics in the field of research and application and other aspects of engineering activities; endeavors to provide such information and opinions in a commonly understandable manner with justification from different points of view;

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Individual and group written work. Group work on formulating and solving problems, presenting the results after prior preparation (presentation).

Programme content

1. Introduction, sources of research funding - review
2. Basic research - NCN, NAWA, MNiSW
3. Industrial research - NCBR, PARP
4. Foreign financing and incubation
5. Proposal - introduction, knowledge review, market need identification, novelty of the project results
6. Creating a research team, assigning roles, defining a work plan
7. Panel of experts

Teaching methods

1. Lecture: multimedia presentation, illustrated with examples
2. Project: individual and team preparation of applications for research funding - carrying out the tasks given by the teacher.

Bibliography

Basic
1. J. Guliński, K. Zasiadły (red.), Innowacyjna przedsiębiorczość akademicka – światowe doświadczenia Polska Agencja Rozwoju Przedsiębiorczości, Warszawa 2005.
2. D. Markiewicz (red), Komercjalizacja wyników badań naukowych – krok po kroku, Kraków 2009.
3. J. Skrzypek (red), Finansowanie projektów innowacyjnych. Poradnik dla przedsiębiorców i przedstawicieli środowiska akademickiego, Kraków 2007.
4. A. Hogue, A. Oshima, Writing Academic English, Pearson, 2006.

Additional
1. J. Pieter, Ogólna metodologia pracy naukowej, Ossolineum, 1967.
2. J. Maćkiewicz, Jak pisać teksty naukowe? , Uniwersytet Gdański, 2001.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	20	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00