



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

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

### Course

Field of study

Automatic Control and Robotics

Year/Semester

2/4

Area of study (specialization)

Autonomous Robots and Systems

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

10

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

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

### Course topics

none

### 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