



## COURSE CARD

### 1. Basic information

Course name in English:	Grant writing for early-stage researchers	
Course name in Polish:	Pisanie grantów dla młodych naukowców	
Number of hours:	15	
Type of course:	Elective course	
Form of course:	lecture	
Code of course:		
Course leader:	dr hab. inż. Bartosz Zajączkowski, prof. PWR	
Faculty of the course leader:	W9 Faculty of Mechanical and Power Engineering	
Email address of the course leader:	bartosz.zajaczkowski@pwr.edu.pl	
Scientific discipline(s) assigned to the course (doctoral students representing the marked disciplines can participate in the course):	Architecture and urban planning	<input type="checkbox"/>
	Automation, electronic, electrical engineering and space technologies	<input type="checkbox"/>
	Information and communication technology	<input type="checkbox"/>
	Biomedical engineering	<input type="checkbox"/>
	Chemical engineering	<input type="checkbox"/>
	Civil engineering, geodesy and transport	<input type="checkbox"/>
	Materials engineering	<input type="checkbox"/>
	Mechanical engineering	<input type="checkbox"/>
	Environmental engineering, mining, and energy	<input checked="" type="checkbox"/>
	Mathematics	<input type="checkbox"/>
	Chemical sciences	<input type="checkbox"/>
	Physical sciences	<input type="checkbox"/>
	Management and quality studies	<input type="checkbox"/>

### 2. Objectives

Grant writing is one of the core skills that need to be acquired by any researcher. The course is aimed at PhD candidates and young researchers without or with very limited experience in the matter. It is designed to introduce the principles of grant writing. During the course, the participants will learn about the precise and persuasive language of grant applications, the importance of the funding agency expectations, the role of reviewers, and several more aspects of successful grant writing. The course includes series of practical tasks and assignments followed by in the class discussions that in the end will help the students to write their first grant application for the pre-doctoral fellowship PRELUDIUM funded by the National Science Centre.

### 3. Content

*Detailed information about the course content, including topics and form of classes.*



No.	Topic	Number of hours	Form of classes
1	Introduction to the course. What is basic research? The format and the purpose of grant application. Discussion about scientific interests of PhD candidates enrolled in the course. The role of the supervisor.	2	lecture
2	The structure of the grant application (with particular focus on the NCN PRELUDIUM). The point of view of reviewers and of the funder. Tailor the message to the audience. Short and long version. How to deal with limited space?	2	lecture
3	Hypothesis – what is your goal?	2	lecture
4	The secrets of the Gantt – how to plan the project? What is the risk assessment and how to mitigate risks?	2	lecture
5	How to write proper state-of-the-art section?	2	lecture
6	Research methodology – what is this all about? Data reduction and treatment	2	lecture
7	Discussion about drafts written by the participants in the course.	2	lecture
8	Summary and submission of grant applications	1	lecture

#### 4. Prerequisites

*List of prerequisites relating to knowledge, skills and other competences for course participants.*

#### 5. Learning outcomes

*List of learning outcomes at level 8 of the Polish Qualifications Framework assigned to the course (mark the learning outcomes in the last column).*

Symbol	Learning outcome	
	<i>KNOWLEDGE. Doctoral student knows and understands:</i>	
SzD_W3	the main trends in the development of the scientific or artistic disciplines covered in the curricula;	<input type="checkbox"/>
SzD_W4	research methodology;	<input checked="" type="checkbox"/>
SzD_W5	the rules for the dissemination of scientific results, including in open access mode;	<input type="checkbox"/>
SzD_W6	the fundamental dilemmas of modern civilization;	<input type="checkbox"/>
SzD_W7	the legal and ethical conditions of scientific activity;	<input checked="" type="checkbox"/>
SzD_W8	the economic and other relevant conditions of scientific activity;	<input checked="" type="checkbox"/>
SzD_W9	basic principles of knowledge transfer to the economic and social spheres and commercialisation of results of scientific activity and know-how related to these results.	<input type="checkbox"/>



	<i>SKILLS. Doctoral student is able to:</i>	
SzD_U2	use knowledge from different fields of science or art to creatively identify, formulate and innovatively solve complex problems or perform research tasks, in particular: - define the purpose and subject of scientific research, formulate a research hypothesis, - develop research methods, techniques and tools, and use them creatively, - draw conclusions on the basis of scientific research; critically analyse and evaluate the results of scientific research, expertise and other creative work and their contribution to knowledge development; transfer the results of scientific activities to the economic and social spheres;	<input checked="" type="checkbox"/>
SzD_U3	communicate on specialised topics to the extent that they enable an active participation in the international scientific community;	<input type="checkbox"/>
SzD_U4	disseminate research results, including in popular forms;	<input type="checkbox"/>
SzD_U5	initiate debates and participate in a scientific discourse;	<input type="checkbox"/>
SzD_U6	be able to speak a foreign language at B2 level of the Common European Framework of Reference for Languages to a level that enables them to participate in the international scientific and professional environment;	<input type="checkbox"/>
SzD_U7	plan and implement an individual or collective research or creative activity, including in an international environment;	<input checked="" type="checkbox"/>
SzD_U8	independently plan and act for one's own development and inspire and organize the development of others;	<input checked="" type="checkbox"/>
SzD_U9	plan classes or groups of classes and implement them using modern methods and tools.	<input type="checkbox"/>
	<i>SOCIAL COMPETENCES. Doctoral student is ready to:</i>	
SzD_K3	fulfilling the social obligations of researchers and creators, initiate public interest activities, thinking and acting in an entrepreneurial way;	<input checked="" type="checkbox"/>
SzD_K4	maintaining and developing the ethos of research and creative environments, including: - carrying out scientific activities in an independent manner, - respecting the principle of public ownership of research results, taking into account the principles of intellectual property protection.	<input type="checkbox"/>

## 6. Evaluation

*Short description of the method(s) used to evaluate the learning outcomes assigned to the course, e.g., exam, test, report, presentation, etc.*

The final grade will be based on the quality of reports and task notes submitted/presented by course participants. The final and the most important assignment will be the preparation of a grant application following the requirements of NCN PRELUDIUM programme. The applications will not be evaluated based on their scientific quality, but rather based on the clarity of the language, feasibility of the research plan, as well as how persuasive is the document in general.

## 7. Teaching methods

*Short description of the teaching methods used during the course, e.g., multimedia presentation, discussion, literature studies, developing written documents, own work, etc.*



The course will involve presentations combined with discussion and development of written documents (example applications). The students are required to present their assigned written homework in front of the group (followed by the discussion).

## 8. Literature

*List of primary and secondary literature used to prepare the course and including additional knowledge for participants, e.g., books, textbooks, research papers, standards, web pages, etc.*

Internet sources, mainly regulations and formal requirements related to grant calls, with particular focus on NCN PRELUDIUM.

<https://www.ncn.gov.pl/en>

## 9. Other remarks

*Additional remarks, comments, (e.g., language of the course)*

The course is taught in English. The language of prepared grant applications is also English.