INTERNATIONAL DOCTORAL PROGRAMME IN COGNITIVE NEUROSCIENCE
in the domain of psychology, philosophy, biological sciences, medical sciences and health sciences
applicable from academic year 2023/3024

Doctoral school	Doctoral School in the Social Sciences (DSSS) at the Jagiellonian University in Krakow
Domain of science and scientific discipline, in which DSSS educates	1) Domain of social sciences: psychology; 2) Domain of humanities: philosophy; 3) Domain of exact and natural sciences: biological sciences; 4) Domain of medical sciences and health sciences: medical sciences, health sciences.
Length of educational process at DSSS	4 years, 8 semesters
Specification of the language, in which courses are held	English
Terms and conditions for realizing curriculum	In order to complete the programme in the chosen discipline, the following are required: 1) acknowledgement of achieving detailed learning outcomes intended for Individual Study Programme; 2) collecting, in the course of realizing the Doctoral Programme (DP), at least 40 ECTS, including 30 ECTS related to PhD student's preparation for carrying out research and publishing its results; 3) submitting doctoral thesis.
Terms and conditions for granting ECTS points	1 ECTS = 30 hours of PhD student's work as part of classes and outside them

1. There are four following Program Modules, as part of which PhD students complete courses:
   a. Module 1: Specialist training - selected areas of scientific achievements,
   b. Module 2: Methodological training – methodology of scientific research,
   c. Module 3: Academic competencies,
   d. Module 4: Professional competencies and soft skills.
2. Participation in doctoral seminar or individual consultations with supervisor, completing teaching practice and completing training in occupational Health and Safety are obligatory. All other courses in the doctoral programme are optional.
3. PhD student may complete courses dedicated to the carried out doctoral programme, doctoral school and others organized by the Jagiellonian University or by other domestic and foreign institutions.
4. ECTS points are granted for completing courses and for other forms of verification of achieving learning outcomes (further on LO) on Level 8 of Polish Qualification Framework.
5. Form of credit, duration and number of ECTS points granted for completing a course at the Jagiellonian University are specified in the course syllabus.
6. Number of ECTS points granted for completing a course or training outside the Jagiellonian University is agreed by the Head of the Program, on the basis of PhD student's declaration concerning work involved, i.e. number of contact hours, remote work and PhD student's own work required for passing the course or training. Thirty didactic hours equal 1 ECTS point.
7. In case of acquiring competence not listed in Table 2, the Head of the Programme, in consultation with the supervisor and Doctoral Committee, decides about the number of ECTS points.
8. A given activity (e.g. writing a scientific paper) may be a proof of acquiring several LO, however for this form of verification ECTS points can be granted only once. In case of completing this form of LO verification more than once (e.g. writing several scientific papers) ECTS points can be granted for each of the forms.

TABLE 1. Listing of course modules

Course/block of courses	Number of hours	ECTS points	Year	Semester	Form of classes	Learning outcomes
Module 1 **Specialist training - selected areas of scientific achievements**						
Doctoral seminar (consultations with supervisor)	40 h (10 h/year)	8 pts (2 pts/year)	I-IV	I-VIII	seminar or individual consultations	W1, W2, W3, U1, U2, K1, K2
Additional consultations related to preparing doctoral thesis	45 h (15 h/year)	1 pts (3 pts/year)	II-IV	III-VIII	individual consultations	W1, W2, W3, U1, U2, K1, K2
Block focused on biological foundations of cognitive processes	15-30 h/course	1-3 pts/course	I-III	I-VI	depending on the lecturer	W1, W2, U1, U3, U5, K1, K2
Block focused on specialist areas of research in cognitive neuroscience	15-30 h/course	1-3 pts/course	I-III	I-VI	depending on the lecturer	W1, W2, U1, U3, U5, K1, K2
Module 2 **Methodological training – methodology of scientific research**						
Methodology of social studies	30 h	min. 2 pts	I-III	I-V	discussion session/ workshop	W2, W4, U2, U3, U4, K2, K3
Scientific research methods	30 h	min. 2 pts	I-II	I-IV	discussion session/ workshop	W2, W3, W4, U2, U3, U4, K2, K3

Block focused on advanced methodology and data analysis in the area of cognitive neuroscience	15-30 h/course	min. 1 pts/course	I-III	I-VI	depending on the lecturer	W3, U1, U2, U3, U5, K1

<table>
<tr><td colspan="7" align="center">Module 3
Academic competencies (scientific communication; conditions for scientific career)</td></tr>
<tr>
<td>Raising funds for research and managing research projects</td>
<td>15-30 h</td>
<td>1-3 pts</td>
<td>I-III</td>
<td>I-VI</td>
<td>workshop/ discussion session</td>
<td>W6, W7, U5, K5</td>
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<tr>
<td>Intellectual property protection and ethics in conducting scientific research</td>
<td>15 h</td>
<td>1 pts</td>
<td>I-IV</td>
<td>I-VIII</td>
<td>discussion session</td>
<td>W6, K3</td>
</tr>
<tr>
<td>Dissemination and popularization of research findings</td>
<td>15-30 h</td>
<td>1-3 pts</td>
<td>I-IV</td>
<td>I-VIII</td>
<td>workshop</td>
<td>W5, U6, U7, U8, K4,</td>
</tr>
<tr>
<td>Scientific cooperation and research projects management</td>
<td>30-45 h</td>
<td>min. 2 pts</td>
<td>I-III</td>
<td>I-VI</td>
<td>depending on the lecturer</td>
<td>W6, U9, K3</td>
</tr>
<tr>
<td>Scientific career management and self-development planning</td>
<td>30-45 h</td>
<td>min. 2 pts</td>
<td>I-III</td>
<td>I-VI</td>
<td>depending on the lecturer</td>
<td>W7, U4, U5, U10</td>
</tr>
<tr>
<td>Academic writing – editing scientific texts</td>
<td>30-60 h</td>
<td>2-4 pts</td>
<td>I-III</td>
<td>I-VI</td>
<td>workshop/language course</td>
<td>W5, U6, U8, U9</td>
</tr>
<tr>
<td>Publishing research papers</td>
<td>10-30 h</td>
<td>1-3 pts</td>
<td>I-III</td>
<td>I-VI</td>
<td>depending on the lecturer</td>
<td>W5, U6, U8, U9</td>
</tr>
<tr>
<td>Impression management and public speaking</td>
<td>30 h</td>
<td>2 pts</td>
<td>I-III</td>
<td>I-VI</td>
<td>workshop</td>
<td>W5, U5, U8</td>
</tr>
</table>

Training in occupational Health and Safety	4 h	-	-	-	training	-

<table>
<tr><td colspan="7" align="center">Module 4
Professional competencies and soft skills (academic teaching; preparation for teaching)</td></tr>
<tr><td>Academic tutoring</td><td>15 h</td><td>1 pts</td><td>I-IV</td><td>I-VIII</td><td>workshop</td><td>W5, W7, U7, U10, U11, K2, K4</td></tr>
<tr><td>Voice emission with elements of rhetoric</td><td>15 h</td><td>1 pts</td><td>I-IV</td><td>I-VIII</td><td>workshop</td><td>W5, W7, U7, U10, U11, K2, K4</td></tr>
<tr><td>Interpersonal communication</td><td>15 h</td><td>1 pts</td><td>I-IV</td><td>I-VIII</td><td>workshop</td><td>U7, U10, U11</td></tr>
<tr><td>Fundamentals of academic teaching</td><td>30 h</td><td>3 pts</td><td>I-II</td><td>I-IV</td><td>discussion session</td><td>W5, W7, U7, U10, U11, K2, K4</td></tr>
<tr><td>Modern information and communication technologies in academic teaching</td><td>30 h</td><td>1-3 pts</td><td>I-IV</td><td>I-VIII</td><td>depending on the lecturer</td><td>W5, W7, U7, U10, U11, K2, K4</td></tr>
<tr><td>Teaching practice specified by Practice Regulations</td><td>40 h</td><td>4 pts</td><td>I-IV</td><td>I-VIII</td><td>professional practice</td><td>W5, W7, U7, U10, U11, K2, K4</td></tr>
</table>

TABLE 2. Learning outcomes for doctoral programme and potential forms of their verification

	Description of learning outcomes	Forms of verification of learning outcomes
W1 U1 K1 K2	W1: PhD student knows and understands – to a degree, which enables the revision of existing paradigms – the world's achievements that embrace theoretical foundations and general issues, as well as selected issues from the disciplines, in which the doctoral thesis is being prepared. U1: PhD student is able to utilize knowledge from different domains of science, especially from the domain encompassing disciplines, in which the doctoral thesis is being prepared. He/she is able to creatively identify, formulate and innovatively solve complex issues or to carry out research based tasks. K1: PhD student is able to critically evaluate achievements in the disciplines, in which the doctoral thesis is being prepared, and present their own contribution to their development. K2: PhD student is able to recognize the importance of knowledge in solving theoretical and practical problems.	– Designing independent research in the area of doctoral thesis, confirmed by e.g. receiving research funds from external sources (e.g. NCN (National Science Centre), NCBiR (National Centre for Research and Development). – Carrying out independent research in the area of doctoral thesis, confirmed by publication in a journal listed in JCR[1]. – Writing a scientific paper in the area of doctoral thesis, confirmed by publication in a journal listed in JCR. – Participation in the works of an interdisciplinary research team, validated by a certificate issued by the project manager, which specifies PhD student's scope of responsibilities. – Receiving funds for financing independent research or an application project from external sources (e.g. NCN, NCBiR). – Submitting a formally correct request for financing research or an application project from external sources (e.g. NCN, NCBiR). – Conducting courses and other forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the area adequate for the learning outcomes – Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.

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[1] *Journal Citation Reports*, listing of journals with indicators of their importance, among others *Impact Factor*.

W2 U3 K1	W2: PhD student knows and understands major development trends in the disciplines, in which the doctoral thesis is being prepared. U3: PhD student, by applying his/her own knowledge, is able to carry out critical analysis and evaluation of research findings, expert activities and other works of creative nature, which contribute to the development of knowledge in the disciplines, in which the doctoral thesis is being prepared. K1: PhD student is able to critically evaluate achievements in the disciplines, in which the doctoral thesis is being prepared, as well as present their own contribution to the development of those disciplines.	– Writing a scientific paper in the area of the doctoral thesis, validated by publication in a JCR-listed journal. – Preparing an expertise commissioned by an external source in the area of the doctoral thesis. – Presenting results of independent research in the area of the doctoral thesis at an international scientific conference. – Reviewing a scientific article for a journal listed in JCR, in the area of the prepared doctoral thesis – Participating in the works of a scientific committee of an international conference in the area of the doctoral thesis. – Conducting courses and other forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), with respect to issues adequate for the learning outcomes. – Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.
W3 U2	W3: PhD student knows and understands the methodology of disciplines adequate for the prepared doctoral thesis. U2: PhD student is able to use methodological knowledge in research work, especially to define the objective and the subject of research, formulate research hypothesis, develop research methods, techniques and tools, as well as to draw independent conclusions, as based on research findings.	– Designing independent research in the area of doctoral thesis, confirmed by e.g. receiving research funds from external sources (e.g. NCN, NCBiR). – Carrying out independent research in the area of doctoral thesis, confirmed by publication in a journal listed in JCR. – Carrying out an independent analysis of data obtained in an experiment, in the area of doctoral thesis, validated by e.g. publication in a journal listed in JCR. – Presenting results of research on cognitive neuroscience at an international conference. – Writing a scientific paper in the area of cognitive neuroscience (to which the prepared doctoral thesis relates), validated by publication in a JCR-listed journal.

		– Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.

W4 U5 U6 U7 U8	W4: PhD student knows and understands the principles of disseminating the results of scientific activity, also in the open access mode.
	
	U5: PhD student can communicate in the field of specialised subjects to a degree enabling active participation in an international scientific community.
	
	U6: PhD student can disseminate research findings, also in popular forms.
	
	U7: PhD student can initiate a debate and participate in a scientific discourse.
	
	U8: PhD student can use a foreign language to a degree enabling participation in an international scientific and professional community.
		– Writing a scientific paper in the area of cognitive neuroscience [to which the prepared doctoral thesis relates] validated by publication in a JCR-listed journal
		
		– Presenting results of independent research in cognitive neuroscience at an international conference.
		
		– Pre-registration of independent research.
		
		– Making independent research data/findings available for an international scientific community.
		
		– Reviewing an article in a journal listed in JCR, in the disciplines of the prepared doctoral thesis
		
		– Undertaking activities popularizing science, among others in the form of:
		  o publishing a popular science article,
		  o giving a lecture or running workshops at popular science events (e.g. Brain Awareness Week, Copernicus Festival),
		  o participating in a radio or TV programme aimed at popularizing science,
		  o participating in the organization of popular science events (e.g. Brain Awareness Week, Copernicus Festival).
		
		– Contribution in the field of educational processes, also outside the Jagiellonian University (e.g. summer/winter school, training, workshop), which concern issues related to the disciplines, in which the doctoral thesis is prepared.
		
		– Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), which concern the use of English in scientific work.

| W5 K2 | W5: PhD student knows and understands fundamental dilemmas of modern civilisation.

K2: PhD student is able to recognize the importance of knowledge in solving theoretical and practical problems. | – Submitting a patent application for a solution, as based on the knowledge acquired in the course of conducting independent research.
– Establishing a start-up as a spin-off of the home institution, as based on knowledge acquired by independently conducted research.
– Receiving funds for financing an independent application project from external sources (e.g. NCBiR).
– Participating in advisory and/or expert bodies on national, local government or corporate levels.
– Undertaking activities popularizing science, among others, in the form of:
    o publishing a popular science article,
    o giving a lecture or running workshops at popular science events (e.g. Brain Awareness Week, Copernicus Festival),
    o participating in a radio or TV programme aimed at popularizing science,
    o participating in the organization of popular science events (e.g. Brain Awareness Week, Copernicus Festival).
– Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), concerning fundamental dilemmas of contemporary civilisation. |
| W6
U9
K4
K5 | W6: PhD student knows and understands economic, legal, ethical and other critical conditions for scientific activity.

U9: PhD student can plan and realize individual and team research undertaking, also in an international environment.

K4: PhD student can think and act in an entrepreneurial manner.

K5: PhD student can maintain and develop the ethos of research environments, including independently carried out research, respecting the principle of public ownership of research findings, taking into account the principles of intellectual property protection. | – Receiving funds for financing an independently conducted application project from external sources (e.g. NCBiR).
– Submitting a formally correct request for financing research or an application project from external sources (e.g. NCN, NCBiR)
– Obtaining a favourable opinion of the ethics committee, adequate for the opinionated project.
– Establishing a start-up as a spin-off of the home institution, as based on knowledge acquired by conducting independent research.
– Submitting a patent application for a solution, as based on the knowledge acquired in the course of conducting independent research. |

		– Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.
W7 U4 K2 K3	W7: PhD student knows and understands the fundamental principles of knowledge transfer to economic and social spheres, as well as the principles of commercializing the results of scientific activity and the know-how ensuing from these results. U4: PhD student can analyse the possibilities of transferring research findings to economic and social spheres. K2: PhD student can recognize the importance of knowledge in solving theoretical and practical problems. K3: PhD student is able to meet researcher obligations and to initiate activities to the benefit of public interest.	– Receiving funds for financing an independently conducted application project from external sources (e.g. National Centre for Research and Development, NCBiR). – Submitting a formally correct request for financing research or an application project from external sources (e.g. NCBiR). – Participating in the realization of an application project. – Establishing a start-up as a spin-off of the home institution, as based on the knowledge acquired in the course of conducting independent research. – Submitting a patent application for a solution, as based on the knowledge acquired in the course of conducting independent research. – Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.
U10	PhD student can focus on their own self-development, as well as inspire the development of other people.	– Receiving funds for financing an independently conducted application project from external sources (e.g. National Science Centre, NCN, or National Centre for Research and Development, NCBiR). – Submitting a formally correct request for financing research or an application project from external sources (e.g. NCN, NCBiR). – Scientific supervision in the form of tutoring. – Supervision over a scientific circle, its section, or another body associating students. – Conducting courses and other forms of education , also outside the Jagiellonian University (e.g. trainings, workshops, summer school), with respect to issues adequate for the learning outcomes.

		–	Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.
U11	PhD student can plan classes or groups of classes and conduct them with the use of modern methods and tools.	–	Completing teaching practice in the form of:
		o	teaching or co-teaching classes,
		o	preparing materials for classes,
		o	participating in classes held by experienced academic staff,
		o	independent supervision of a student through teaching the practice of research, data analysis, etc.
		–	Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.
K5	PhD student can maintain and develop the ethos of research environments, including independently carried out research, respecting the principle of public ownership with regard to research findings and taking into account the principle of intellectual property protection.	–	Participating in statutory bodies of the university and/or scientific societies.
		–	Completing courses or participating in various forms of education, also outside the Jagiellonian University (e.g. trainings, workshops, summer school), in the areas adequate for the learning outcomes.