Tłumaczenie programu studiów na język angielski

Programme of study
Cognitive Science

Name of the field of study	Cognitive Science
Name of the field of study in English / in the language of instruction	Cognitive Science
Language of instruction	English
Level of education	second cycle
Level in the PQF	7
Studies profile	general academic
Number of semesters	4
Number of ECTS credits to graduate	120
Form of studies	full time
Professional title awarded to the graduates (name of the qualification in its original wording, PQF level)	magister
Number of ECTS credits that the student needs to obtain for the classes conducted with direct participation of academic teachers and/or other tutors	109
Number of ECTS credits for the classes in the area of humanities and/or social sciences (not less than 5 ECTS)	N/A

Assignment of the field of study to a given area of study and academic disciplines

Area of study	Academic discipline	Percentage share of the academic disciplines	Leading academic discipline (more than a half of the learning outcomes)
Social Sciences	Psychology	31	
Humanities	Philosophy	19	
Medical And Health Sciences	Medical Sciences	14	
Natural Sciences	Computer And Information Sciences	12	
Natural Sciences	Mathematics	12	
Humanities	Linguistics	12	
Total:	-	100%	-

Learning outcomes defined for the field of study by reference to the descriptors of 2nd degree in the Polish Qualification Framework for qualifications at level 6–7 obtained within the framework of the Higher Education and Science System after obtaining full qualification at level 4 of the PQF

Learning outcomes symbol for the field of study	Learning outcomes	Reference to PQF 2nd degree descriptors
Knowledge: the graduate knows and understands		
K_W01	Has advanced knowledge about the position of Cognitive Science in the system of knowledge and its particularities and methodological links to philosophy, psychology, linguistics, AI and modelling cognitive processes sciences.	P7S_WG
K_W02	Has advanced knowledge about current trends in research in the field of Cognitive Science and related sciences, psychology, philosophy, linguistics, AI and modeling cognitive processes sciences.	P7S_WG

K_W03	Has knowledge about advanced statistical methods used in research in the field of Cognitive Science and knows of selected statistical tools.	P7S_WG
K_W04	Knows at least one programming language at the intermediate level used in research in the field of Cognitive Science and related branches of science.	P7S_WG
K_W05	Has advanced knowledge about human cognitive processes, their neurobiological and neurophysiological foundation, and socio-cultural determinants.	P7S_WG
K_W06	Knows how research equipment used in the field of Cognitive Science and related sciences works (biomedical engineering, biocybernetics).	P7S_WG
K_W07	Knows of selected research paradigms used in cognitive-, developmental-, social- and neuro-psychology, used by Cognitive Science, as well as specialist terminology used in those scientific disciplines.	P7S_WG
K_W08	Knows the specialized psychological, neuropsychological, philosophical, and information technology terminology used in Cognitive Science, understands its sources and applications in related scientific disciplines.	P7S_WG
K_W09	Has knowledge of ethical principles and recognized procedures of conduct when conducting scientific research.	P7S_WK
K_W10	Has knowledge regarding ethical rules and recognised procedures during scientific research.	P7S_WK
K_W11	Has knowledge of ethical and legal issues regarding using intellectual property, and data collection and processing.	P7S_WK
K_W12	Knows and understands a variety of complex organisational solutions in the field of professional activity in the context of solutions used in different fields.	P7S_WK
Skills: the graduate is able to		
K_U01	Can critically assess and evaluate a theoretical notion in the field of Cognitive Science, psychology, philosophy, neurophysiology, linguistics, or mathematics. Can evaluate and review empirical research and draw conclusions.	P7S_UW
K_U02	Can independently or in a group design and carry out a scientific study in the field of Cognitive Science, psychology, mathematics, neurophysiology, or linguistics (formulate the research problem, question or a hypothesis, perform their operationalisation, and verify using correct methods).	P7S_UW
K_U03	Can prepare and analyze the data describing cognitive phenomena using known IT techniques (selected programming languages), and advanced statistical methods.	P7S_UW
K_U04	Can prepare and analyze the data describing cognitive phenomena using known IT techniques (selected programming languages), and advanced statistical methods.	P7S_UW
K_U05	Can model select aspects of how the human mind works or cognitive processes using adequate IT and mathematical tools.	P7S_UW

K_U06	Can report on selected issues and research findings in the form of a written report, written using correct editorial standards, and orally, in the form of a presentation, with adequate use of audiovisual aids.	P7S_UK
K_U07	Can discuss selected issues of Cognitive Science in the field of psychology, philosophy, linguistics, mathematics, neurophysiology, or neurobiology together with specialists from various scientific disciplines.	P7S_UK
K_U08	Can find needed information in the field of Cognitive Science, psychology, mathematics, neurophysiology, neurobiology, or linguistics in professional literature, databases and other sources.	P7S_UW
K_U09	Uses English on such a level that they can participate in an international professional and scientific community (at least ESOKJ B2+ level).	P8S_UK
K_U10	Can manage work of an interdisciplinary research team.	P7S_UO
K_U11	Independently determines the directions of own development and further training.	P7S_UU
Social competences: the graduate is ready to		
K_K01	Understands the necessity for continuous learning by regularly familiarizing themselves with scientific publications from various disciplines. Seeks for new methods and sources in order to supplement their knowledge and improve professional skills.	P7S_KK
K_K02	Understands the importance of knowledge in solving cognitive and practical problems.	P7S_KK
K_K03	Can work together with other people and in groups by adopting different roles.	P7S_KO
K_K04	Can think and act entrepreneurially.	PS7_KO
K_K05	Is willing to ensure intellectual honesty in his own and others' actions.	P7S_KR
K_K06	Is willing to take care of the integrity of the research conducted and the results presented.	P7S_KR
K_K07	Is aware of and respects the diversity of aims and values held by people; treats other people with respect regardless of their gender, sexual orientation, educational level, social group, religion and culture.	P7S_KR

EXPLANATIONS

The learning outcomes symbol for the programme of study includes:

– letter K – to highlight the fact that the learning outcome refers to the programme of study
– _ (underscore),
– one of the letters W, U and/or K – to mark the category of learning outcomes (W – knowledge (Polish: wiedza), U – skills (Polish: umiejętności), K – social competences (Polish: kompetencje społeczne),

– learning outcome number in a given category, written in the form of two digits (precede the digits 1–9 with a 0).

Classes and/or groups of classes assigned to a given term of studies

Semester: first
Year of study: first

Course title	Form of classes – number of hours								Total: number of class hours	Total: ECTS points	Programme of study learning outcomes	Academic discipline(s) related to the course
	Lecture	Seminar classes	Seminar	Practical classes	Laboratory classes	Workshops	Project work	Other				
Advanced topics in cognitive science			30						30	4	K_W01, K_W02, K_W05, K_W07, K_W08 K_U01, K_U02 K_K01, K_K02	psychology, philosophy, linguistics, medical sciences
Course Content	The course is aimed to familiarize participants with the current trends in research and controversies in cognitive science. The course will help students (1) broaden their knowledge of cognitive processes and their cerebral foundations, problems of computational modeling, and relation to AI, (2) clarify their own research interests, choose their educational pathway and master's seminar. The course begins with an outline of current controversies around the architecture of cognition, including core knowledge systems of the physical and social environment, symbolic vs. embodied (or "4E") cognition, the big issue of consciousness, classical computational cognitive architectures, and network organization of the system (its computational and neurobiological issues). Further, some methodological issues will be taken up, including contemporary discussed problems of replicability of experimental and neuroimaging research results. A discussion on the potential applications of cognitive research concludes the list of the class topics.											
Learning outcomes	Oral presentation, class activity, entry tests											

assessment												
Advanced Python for cognitive scientists	15			30					45	5	K_W04, K_W08 K_U02, K_U04 K_K01, K_K02	computer and information sciences
Course Content	The goal of the course is to build fluency in using the Python programming language as a tool for scientific computing, data manipulation and visualization. We will introduce libraries which constitute a core of the Python ecosystem for data analysis: numpy, scipy, pandas, matplotlib. After covering the basics, students will have the opportunity to hone their skills by working through a number of applications of the introduced tools in data analysis. Simultaneously, they will be improving their programming style and learning about good programming practices. Previous experience with Python is necessary.											
Learning outcomes assessment	Class performance, assignments, quizzes											
Cognitive processes modelling I	30								30	4	K_W01, K_W02, K_W08 K_U01, K_U07 K_K01, K_02	psychology, medical sciences, philosophy, linguistics, mathematics, computer and information sciences
Course Content	Cognitive systems are characterized by their ability to functionally adapt to their environments, which in turn allows them to react to the changes in their surroundings accordingly or initiate actions of their own. Mechanisms of functional adaptation of this kind are found in a wide variety of phenomena spanning multiple scales: biological systems (single cells, cell colonies, organized tissues, systems such as immune system etc.), whole organisms, higher animals and humans with their mental processes, social groups exhibiting cultural adaptation, and artificial systems (autonomous robots, software agents). Modeling such phenomena requires an interdisciplinary approach in which different fields of study stimulate each other: psychological and biological discoveries inspire the development of new mathematical models and computational methods, which often find applications outside of the original domain. Developed models help to formulate the hypotheses, plan further experiments,											

	verify theories, and augment the overall understanding of cognitive processes. The aim of this course is to give an overview of various paradigms, approaches and methods used to model processes of systemic adaptation. We show how different methods relate to each other and how they can be applied to uncover different aspects of studied phenomena. We focus on methodological issues and illustrate them with examples of concrete models and concrete research from multiple domains such as motor development, decision making, language acquisition, social coordination, cultural evolution etc.											
Learning outcomes assessment	Written exam, quizzes											
Methods in neuroscience	30								30	4	K_W01 K_W02, K_W05, K_W06, K_W07, K_W08 K_U01, K_W07 K_K01, K_K02	psychology, medical sciences
Course Content	During the lecture students learn about different methods of neuronscience and psychophysiology used in basic and applied research. They will learn about the techniques of transcranial stimulation and structural and functional imaging, as well as the advantages and disadvantages of each of these techniques. In addition, the basics of measurement and analysis of the most popular signals used in neuroscience and psychophysiology (e.g. EEG, BOLD, ECG, etc.) and the basic principles of verification of research hypotheses in neurocognitive science will be discussed. Students will also learn which research methods, techniques and procedures should be applied depending on the purpose of the study and the population and how to verify research hypotheses in various fields of psychology using neuronscience and psychophysiology methods.											
Learning outcomes assessment	Written exam											
Diploma seminar I			15						15	1	K_W01, K_W02, K_W07, K_W09, K_W12 K_U01, K_U07	psychology, medical sciences, philosophy, linguistics,

											K_K01, K_K02, K_K04, K_K07	mathematics, computer and information sciences
Course Content	**At the beginning of the semester students receive guidance as to elective courses they should take in the first semester depending on their background and previous degree. Then in the course of the** semester Research labs affiliated with the Cognitive Science program give presentations, introducing their research activities and opportunities for students, and students are expected to submit short written reports on chosen presentations. By the end of the semester they are expected to choose the Research lab they want to join .											
Learning outcomes assessment	Short written assignments											
General university courses									Min. 60	6	-	-
Course Content	During their studies the student chooses courses which are not connected with Cognitive Science. The content of the courses depends on the student's choice, whereas the course format and assessment methods depend on the faculty offering the course.											
Learning outcomes assessment	In accordance with the course syllabus.											
Elective courses									Min. 60	6	according to the discipline chosen: K_W01 - K_W12 according to the discipline chosen: K_U01 - K_U11 according to the discipline chosen: K_K01 - K_K07	-

Course Content	Not assigned (content according to selected courses). In addition to elective courses offered specifically to students on this program, selected other courses offered at cooperating faculties / institutes can be counted as electives. In this semester this pool can also be used to supplement any curriculum differences for students who are not graduates of first-cycle studies in Cognitive Science at the University of Warsaw.
Learning outcomes assessment	In accordance with the course syllabus.

Total number of ECTS credits (in semester): 30
Total number of class hours (in semester): min. 300
Total number of class hours specified in the programme of study for every field of study, level and profile (for the entire cycle): min. 1255

Semester: second
Year of study: first

At the end of the first semester, students choose one of two thematic paths: neurocognitive or computational. The paths differ in obligatory subjects. Courses from one path may be elective subjects for students in the other path.

Course name	Form of classes – number of hours								Total: number of class hours	Total: ECTS points	Programme of study learning outcomes	Academic discipline(s) related to the course
	Lecture	Seminar classes	Seminar	Practical classes	Laboratory classes	Workshops	Project work	Other				
Introduction to machine learning	30			30					60	6	K_W01, K_W02, K_W04, K_W08 K_U01, K_U02, K_U03, K_U05, K_U08 K_K01, K_K02	mathematics, computer and information sciences
Course Content	This course provides an overview of machine learning concepts and algorithms. It focuses mostly on techniques related to classification and regression, such as nearest neighbors methods, generalized linear models, tree-based methods, support vector machines, feed-forward neural networks. Simple clustering techniques (k-means clustering, hierarchical clustering) are also introduced. Lecture covers main principles behind different algorithms, model evaluation strategies and basics of statistical learning theory. Connections with topics known from cognitive modeling (e.g., categorization models, signal detection theory) or statistics (e.g., sampling, probability density estimation, logistic regression) are made. During laboratory classes students learn practical applications of the introduced methods using libraries from Python ecosystem (scikit-learn, XGBoost, PyTorch).											

Learning outcomes assessment	L: written exam, C: assignments											
Advanced statistical methods and models in experimental design				30					30	3	K_W01, K_W03 K_U01, K_U04 K_K01, K_K02	computer and information sciences, mathematics, psychology
Course Content	The course assumes students have the basic knowledge of statistical analysis for empirical sciences, including the understanding of the logic of statistical inference, classical statistical tests (t test, chi-square test etc.), and the rudiments of the General Linear Model (ANOVA, simple linear regression). Students without the necessary prerequisites will be offered placements in supplementary courses in the first semester. Based on these foundations, students in this course will learn more advanced statistical methods used in cognitive research: logistic regression, mixed effects models, structural equation modelling, and other extensions of GLM. The course will provide students with hands-on experience with real data analysis using R, a cutting-edge statistical environment.											
Learning outcomes assessment	Tests, assignments											
Cognitive processes modelling II (obligatory for the computational path)	30			30					60	6	K_W01, K_W02, K_W05, K_W08 K_U01, K_U03, K_U05 K_K01, K_K02	psychology, medical sciences, philosophy, linguistics, mathematics, computer and information sciences
Course Content	The course consists in more detailed analyses of concrete models of cognitive processes (broadly understood). The processes concern levels of individual cognition, interindividual coordination as well as group processes. The phenomena											

	modeled include categorization, attention, information integration, decision-making and the emergence of communication and language. Lectures are devoted to explaining the suitability of various computational models for those levels and phenomena. Lab work provides hands-on experience in using concrete methods and architectures.											
Learning outcomes assessment	L: written exam C: Group projects, assignments											
Introduction to natural language processing (obligatory for the computational path)	30			30					60	6	K_W01, K_W02, K_W05 K_U01, K_U03, K_U05, K_U07, K_U08 K_K01, K_K02	linguistics, computer and information sciences, psychology
Course Content	Natural language processing (NLP) is one of the most important technologies of the information age. Understanding complex language utterances is also a crucial part of artificial intelligence. This course presents different ways of describing the expressions of natural language (English, Polish...) on different linguistic levels (including syntax and semantic) and with the use of various formalisms. It presents the most important existing linguistic resources that can be used in the development of new applications, as well as the existing programming tools allowing for basic linguistic analysis of the text. Various types of applications running on text data will also be presented: information mining, names recognition, terminology extraction or machine translation.											
Learning outcomes assessment	L: written exam C: Projects, assignments											
Modern topics in neuroscience (obligatory for the neurocognitive path)	30			30					60	6	K_W01, K_W03, K_W05, K_W06, K_W07, K_W09 K_U01, K_U03, K_U07, K_U08	psychology, medical sciences, computer and information sciences

											K_K01, K_K02, K_K07	
Course Content	Cognitive neuroscience is a multidisciplinary field which mainly focuses on exploring neurobiological underpinnings of behavior by the means of neuroimaging methods. Recently, it has been emphasized that complex models of human behavior cannot be created without developing methods which integrate data from various neuroimaging methods and synthesizing large scale data which are already publicly available. The course will cover a range of methodological advancements which are believed to be necessary for further progressing the cognitive neuroscience field. The list of topics may include among others: meta-analysis in neuroscience, brain stimulation methods, multimodal neuroimaging, single-cell recording, meta-analysis in neuroscience.											
Learning outcomes assessment	Class performance, assignments, projects and group projects											
Research methods and experimental design in neuroscience (obligatory for the neurocognitive path)	30			30					60	6	K_W05, K_W06, K_W07, K_W11 K_U01, K_U02 K_K01, K_K02	psychology, medical sciences, computer and information sciences
Course Content	The aim of the course is to provide basic knowledge about the application of experimental methods of neurocognitive science and to develop the ability to use these methods in practice. It includes lectures combined with basic training during which students become familiar with the equipment and software enabling them to collect and analyze behavioural, electrophysiological (EEG) and neuroimaging data (family of MRI and NIRS methods). Students will learn to collect experimental data on their own, as well as to process and analyze them. Analytical exercises will also include working with existing sets of experimental data.											
Learning outcomes assessment	L: written exams C: written reports, assignments											
Diploma seminar II			15						15	1	K_W01, K_W02, K_W07 K_W09, K_W10, K_W11	psychology, medical sciences, philosophy, linguistics,

											K_U02, K_U03, K_U06, K_U07, K_U08, K_U11 K_K01, K_K02, K_K04, K_K05, K_K06, K_K07	mathematics, computer and information sciences
Course Content	In the first part of the semester seminar meetings are held jointly with second year students (see Diploma Seminar IV) from a given thematic path (computational or neurocognitive). Second year students present their masters projects, which are then discussed in class. In the second part of the semester first year students present their own research plans and by the end of the semester they are required to submit their topics and supervisors for approval to the didactic council.											
Learning outcomes assessment	Oral presentation, class performance											
Research lab I							30		30	3	K_W01, K_W02, K_W09, K_W10, K_W11 and according to the discipline chosen: K_W05 - K_W08 K_U02, K_U07, K_U08, K_U10 and according to the discipline chosen: K_U03 - K_U05 K_K01, K_K02, K_K04, K_K05, K_K06, K_K07	psychology, medical sciences, philosophy, linguistics, mathematics, computer and information sciences
Course Content	Participation in the work of the chosen Research lab (the supervisor and their team): developing methods, research tools, planning experiments, collecting data, analyzing and writing up results etc. Activities needed to complete Research lab I exclude students' work on their own research projects (i.e., Master's thesis).											

Learning outcomes assessment	Various tasks depending on the topic and stage of the research work of the laboratory (e.g. literature review, preparation of experimental materials, data collection, data analysis, report/article writing).											
Elective courses									Min. 50	5	according to the discipline chosen: K_W01 - K_W12 according to the discipline chosen: K_U01 - K_U11 according to the discipline chosen: K_K01 - K_K07	-
Course Content	Not assigned (content according to selected courses). In addition to elective courses offered specifically to students on this program, selected other courses offered at cooperating faculties / institutes can be counted as electives. In addition courses from one thematic path (eg. computational) can be counted as electives by students from the other path (eg. neurocognitive). In this semester this pool can also be used to supplement any curriculum differences for students who are not graduates of first-cycle studies in Cognitive Science at the University of Warsaw.											
Learning outcomes assessment	In accordance with the course syllabus.											

Total number of ECTS credits (in semester): 30
Total number of class hours (in semester): min. 350
Total number of class hours specified in the programme of study for every field of study, level and profile (for the entire cycle): min. 1255

Semester: third
Year of study: second

Course name	Form of classes – number of hours								Total: number of class hours	Total: ECTS points	Programme of study learning outcomes	Academic discipline(s) related to the course
	Lecture	Seminar classes	Seminar	Practical classes	Laboratory classes	Workshops	Project work	Other				
Philosophy of science: an overview for cognitive science				30					30	4	K_W01, K_W02, K_W08, K_W09 K_U01, K_U02, K_U07, K_U08 K_K01, K_K02, K_K07	philosophy, psychology
Course Content	The subject of philosophy of science is reflection on the nature of empirical sciences, analysis of their structure and methods, reconstruction of their assumptions and development models. The aim of the course will be to familiarize students with the main problems, directions and discussions in the philosophy of science, as well as to relate the discussed issues to the specific situation of cognitive science.											
Learning outcomes	Short paper, presentation											

assessment												
Critical reading and academic writing			30						30	4	K_W01, K_W06, K_W07, K_W08 K_U01, K_U06, K_U07, K_U08, K_U09 K_K01, K_K02	psychology
Course Content	One of the key academic skills is a critical analysis of empirical research reports in terms of the research questions undertaken, the intended objectives of the work, the methods used and the conclusions drawn. Combined with advanced academic writing and text composition skills, it is a basic tool in the work of a researcher of cognitive processes and their brain organization. The aim of this course is to develop these skills in such a way that the participant is able to carry out in-depth analysis of scientific publications and evaluation of the research carried out; has acquired in-depth knowledge of the research process and how to report on it in psychology and cognitive science, as well as to evaluate and communicate in writing the value of the research on their own.											
Learning outcomes assessment	Article reviews, essay											
Advanced applications of neural networks (deep learning) (obligatory for the computational path)				30					30	4	K_W01, K_W02, K_W04, K_W08, K_U01, K_U02, K_U03, K_U04, K_U05 K_K01, K_K02	mathematics, computer and information sciences, psychology
Course Content	This class provides students hands-on experience in training modern neural networks architectures, acting as universal feature extractors (deep learning). Specialized feed-forward (convolutional network) and recurrent (long short-term memory networks) architectures are introduced. The material is organized around specific applications concerning topics important for cognitive science, for example image recognition, language modeling, modeling action and perception, cognitive robotics.											

	Students train their own models, and experiment with already published models from various domains. The course uses Python programming language and popular neural network libraries (PyTorch, Keras, TensorFlow).											
Learning outcomes assessment	Projects											
Information Theory for the cognitive sciences (obligatory for the computational path)			30						30	4	KW_01, K_W02, K_W05, K_W08 K_U03, K_U07, K_U08 K_K01, K_K02	philosophy, psychology, computer and information sciences
Course Content	The course will outline the theory of information and its practical applications in various fields of science. The aim is to provide solid background for understanding the basic measures of information and show their usefulness in other fields of science (biology, linguistics, neuroscience and social sciences). The second part of the course will be focused on the discussion on possible limitations of information theory as understood by classical Shannonian approaches. We will present contemporary works considering those limitations and the discussion of informational complexity.											
Learning outcomes assessment	Project and its presentation, short paper presentation and guiding the discussion, homeworks, class performance.											
Psychophysiology and eye-tracking (obligatory for the neurocognitive path)			30						30	4	K_W05, K_W07 K_U01, K_U02, K_U06, K_U07, K_U08 K_K01, K_K02, K_K06, K_K07	psychology, medical sciences
Course Content	This workshop will familiarise students with the practical use of most important methods of experimental psychophysiology and eye-tracking (oculography). During the classes the students will not only learn the basics of these methods, but also how to carry out signals registration and analysis, as well as how to interpret the data for the measurements of saccades, fixations and pupil dilation.											

Learning outcomes assessment	Group project, written report											
Developmental cognitive neuroscience (obligatory for the neurocognitive path)			30						30	4	K_W01, K_W02, K_W05, K_W07, K_W08 K_U01, K_U07 K_K01, K_K02	psychology, medical sciences
Course Content	Infancy and early childhood is a period of most dramatic changes in brain organization. The majority of perceptual, motor and cognitive skills emerge during this period. A large proportion of our knowledge about the world is based on developmental achievements from it. Throughout the course we will look at basic concepts and key studies in the area of Developmental Cognitive Neuroscience. That is, the study of associations between cognitive and brain development, with particular emphasis on changes in functional brain organization.											
Learning outcomes assessment	Short essay, written test											
Diploma seminar III			30						30	5	K_W01, K_W02, K_W07 K_W09, K_W10, K_W11 K_U02, K_U03, K_U06, K_U07, K_U08, K_U11 K_K01, K_K02, K_K03 K_K04, K_K05, K_K06, K_K07	psychology, medical sciences, philosophy, linguistics, mathematics, computer and information sciences
Course Content	Students work on their Master's theses with their supervisors and by the end of this semester they are expected to submit (any) one chapter of their thesis approved by their supervisor. . Also, they attend several training sessions on research and academic skills (e.g., writing abstracts, preparing talks, managing bibliography) .											
Learning outcomes	Diploma thesis chapter											

assessment												
Research lab II							60		60	6	K_W01, K_W02, K_W09, K_W10, K_W11 and according to the discipline chosen: K_W05 - K_W08 K_U02, K_U07, K_U08, K_U10 and according to the discipline chosen: K_U03 - K_U05 K_K01, K_K02, K_K03, K_K04, K_K05, K_K06, K_K07	psychology, medical sciences, philosophy, linguistics, mathematics, computer and information sciences
Course Content	Participation in the work of the chosen Research lab (the supervisor and their team): developing methods, research tools, planning experiments, collecting data, analyzing and writing up results etc. Activities needed to complete Research lab II exclude students' work on their own research projects (i.e., Master's thesis).											
Learning outcomes assessment	Various tasks depending on the topic and stage of the research work of the laboratory (e.g. literature review, preparation of experimental materials, data collection, data analysis, report/article writing).											
Electives courses									Min. 30	3	according to the discipline chosen: K_W01 - K_W12 according to the discipline chosen:	-

											K_U01 - K_U11 according to the discipline chosen: K_K01 - K_K07	
Course Content	Not assigned (content according to selected courses). In addition to elective courses offered specifically to students on this program, selected other courses offered at cooperating faculties / institutes can be counted as electives. In addition courses from one thematic path (eg. computational) can be counted as electives by students from the other path (eg. neurocognitive).											
Learning outcomes assessment	In accordance with the course syllabus.											

Total number of ECTS credits (in semester): 30
Total number of class hours (in semester): min. 290
Total number of class hours specified in the programme of study for every field of study, level and profile (for the entire cycle): min. 1255

Semester: fourth
Year of study: second

Course name	Form of classes – number of hours								Total: number of class hours	Total: ECTS points	Programme of study learning outcomes	Academic discipline(s) related to the course
	Lecture	Seminar classes	Seminar	Practical classes	Laboratory classes	Workshops	Project work	Other				
Communication skills						15			15	2	K_W10, K_W11 K_U06 K_K01, K_K03, K_K04, K_K06, K_K07	psychology
Course Content	In this course students learn how to clearly communicate complex scientific ideas to the general public. They develop both written and oral communication skills. They produce a popular scientific article and create a short, few-minute film.											
Learning outcomes assessment	Projects											
Internship								90 internship	90	5	K_W01-K_W12, K_U01-K_U11, K_K01-K_K07 depending on the place of internship	-

											and type of tasks assigned	
Course Content	The aim of the internship is to improve the qualifications of future graduates and to orient them in the labour market. Places where students will be able to develop their knowledge and skills and learn how to apply them in practice include new technology companies, research and development departments, medical facilities using e.g. brain imaging methods, research labs at the University of Warsaw or external labs. Internships may also take the form of professional work or business activities, the nature of which shall correspond to the objectives and learning which corresponds to the objectives and learning outcomes defined for professional internships. The student will do the internship during the studies (till the end of the 2nd year) in the amount of no less than 90 hours. ECTS credits are added to the total number of credits obtained during the 2nd year of studies regardless of the date of the internship.											
Learning outcomes assessment	General rules for the completion of internship: Internships are carried out, among others, in new technology companies, research and development departments, medical institutions using e.g. brain imaging methods, research laboratories of the University of Warsaw or external laboratories. On behalf of the University, the Dean for Student Affairs or a person authorised by him/her is responsible for organising and monitoring the internship. Records of students who have completed internship, including all necessary data, are kept by a designated employee of the Dean's Office using an IT application. Before commencing the internship, the student shall be obliged to: (a) familiarise himself/herself with the rules of the internship and in particular with the learning outcomes assessment, b) agree the programme and conditions of the internship with the supervisor at the location where the internshipwill be carried out, c) obtain approval of the programme and the date of the internship from the Vice-Dean for Student Affairs or a person authorised to do so.											

	Verification methods: Credit for the internship is given by approval from the Dean for Student Affairs or an authorised person on the basis of the certificate of the internship and the attached internship journal.											
Diploma seminar IV			30						30	5	K_W01, K_W02, K_W07 K_W09, K_W10, K_W11 K_U02, K_U03, K_U06, K_U07, K_U08, K_U11 K_K01, K_K02, K_K04, K_K05, K_K06, K_K07	psychology, medical sciences, philosophy, linguistics, mathematics, computer and information sciences
Course Content	Students work on their Master's theses with their supervisors and by the end of this semester they are expected to have written up and submitted their theses. Also, there are seminar meetings in the first part of the semester gathering students from a given thematic path (computational or neurocognitive), together with first year students, and each student is expected to give a presentation on their research project.											
Learning outcomes assessment	Oral presentation, diploma thesis											
Research lab III							60		60	6	K_W01, K_W02, K_W09, K_W10, K_W11 and according to the discipline chosen: K_W05 - K_W08 K_U02, K_U07,	psychology, medical sciences, philosophy, linguistics, mathematics, computer and

											K_U08, K_U10 and according to the discipline chosen : K_U03 - K_U05 K_K01, K_K02, K_K03, K_K04, K_K05, K_K06, K_K07	information sciences
Course Content	Participation in the work of the chosen Research lab (the supervisor and their team): developing methods, research tools, planning experiments, collecting data, analyzing and writing up results etc. Activities needed to complete Research lab III exclude students' work on their own research projects (i.e., Master's thesis).											
Learning outcomes assessment	Various tasks depending on the topic and stage of the research work of the laboratory (e.g. literature review, preparation of experimental materials, data collection, data analysis, report/article writing).											
Electives courses									Min. 12 0	12	according to the discipline chosen: K_W01 - K_W12 K_U01 - K_U11 K_K01 - K_K07	-
Course Content	Not assigned (content according to selected courses). In addition to elective courses offered specifically to students on this program, selected other courses offered at cooperating faculties / institutes can be counted as electives.											
Learning outcomes assessment	In accordance with the course syllabus.											

Total number of ECTS credits (in semester): 30
Total number of class hours (in semester): min. 315
Total number of class hours specified in the programme of study for every field of study, level and profile (for the entire cycle): min. 1255

Percentage share of the number of ECTS credits in the total number of credits for each of the disciplines the field of study has been assigned to.

Area of study	Academic discipline	Percentage share of the number of ECTS credits in the total number of ECTS credits for each academic discipline
Social sciences	Psychology	26%
Humanities	Philosophy	9%
	Linguistics	8%
Natural sciences	Mathematics	9%
	Computer And Information Sciences	21%
Medical and health sciences	Medical Sciences	14%

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