Appendix No 1 to Resolution No 9 of the NCU Senate of 30 March 2021

S t u d y p r o g r a m m e

Part A) of the study programme *

L e a r n i n g o u t c o m e s

Faculty offering the field of study:	**Faculty of Philosophy and Social Sciences**
Field of study:	**Cognitive Science**
Level of study:	**second-cycle studies**
Level of the Polish Qualifications Framework:	**level 7**
Degree profile:	**general academic**
Professional degree awarded to the graduate:	**magister**
Allocation of the field of study within academic or artistic discipline(s), to which learning outcomes for a given field of study refer:	**Disciplines:** **- Social Communication and Media Sciences (57%)** **-Psychology (10%)** **-Informatics (10%)** **- Mathematics (10%)** **- Biological Sciences (10%)** **- Philosophy (3%)** **Major discipline: Social Communication and Media Sciences**

Symbol	**Upon completion the graduate achieves the learning outcomes specified below:**
	KNOWLEDGE
K_W01	The graduate knows in-depth level of the terminology of Cognitive Science in English.
K_W02	The graduate has an advanced knowledge of the syntax of presented programming languages.
K_W03	The graduate understands the most important algorithms and methods used in a given subject.
K_W04	The graduate has advanced and extensive knowledge of multi-paradigm programming languages.
K_W05	The graduate knows in-depth level of the research methods and argumentative strategies appropriate for one of the major subdisciplines of the cognitive sciences.
K_W06	The graduate knows different approaches to computational modeling.
K_W07	The graduate has systematised and detailed knowledge of computational tools.
K_W08	The graduate is familiar with the theorems and laws of selected fields.
K_W09	The graduate has systematised and detailed knowledge about research practices, used logic, and making conclusions.
K_W10	The graduate is familiar with the notions used in given subjects.
K_W11	The graduate understands the physiology of the neural system.
	SKILLS
K_U01	The graduate is capable of verifying hypotheses.
K_U02	The graduate is able to use advanced features of programming languages to solve real-world problems and research tasks.
K_U03	The graduate is capable of writing clean code.
K_U04	The graduate is able to study and critically evaluate research papers in English.

K_U05	The graduate is able to communicate acquired knowledge of functional brain development in English.
K_U06	The graduate is capable of selecting the computational method to carry out computations and answer scientific questions.
K_U07	The graduate is able to work with matrices .
K_U08	The graduate selects argumentative strategies, formulates responses to criticism.
K_U09	The graduate has advanced skills in constructing proofs and testing hypotheses.
K_U10	The graduate is able to organise his/her own work and can work in a team.
K_U11	The graduate is able to use English language in the field of science and scientific disciplines relevant to the field of study, in accordance with the requirements specified for the B2 + level of the European System for the Description of Languages.
SOCIAL COMPETENCES	
K_K01	The graduate understands the significance of the scientific method in problem solving.
K_K02	The graduate participates in discussion and is open to sharing his/her knowledge with others.
K_K03	The graduate understands the need for continuous training and professional development.
K_K04	On the basis of creative analysis of new situations and problems the graduate independently formulates proposals for their solution.
K_K05	The graduate is open to new ideas and willing to change his/her opinion in the light of available data.
K_K06	The graduate finds solutions to problems on forums and discussion groups and can provide information on how to solve standard difficulties that arise during work.

Part *B) of the study programme*

D e s c r i p t i o n o f t h e p r o c e s s r e s u l t i n g i n t h e a c h i e v e m e n t o f l e a r n i n g o u t c o m e s

Faculty offering the field of study:	Faculty of Philosophy and Social Sciences
Field of study:	Cognitive Science
Level of study:	second cycle
Level of the Polish Qualifications Framework:	level 7
Degree profile:	general academic
Allocation of the field of study within academic or artistic discipline(s), to which learning outcomes for a given field of study refer:	Disciplines: - Social Communication and Media Sciences (57%) - Psychology (10%) - Informatics (10%) - Mathematics (10%) - Biological Sciences (10%) - Philosophy (3%) **Major discipline: Social Communication and Media Sciences**
Mode of study:	full-time programme
Number of semesters:	4
Number of ECTS required for the award of qualifications corresponding to the level:	120
Total number of teaching hours:	960
Professional degree awarded to the graduate:	magister
The relationship between the study programme and NCU mission and strategy:	The field of study is created in connection with the commitment in the application for Excellence Initiative – Research University to create at least 3 new English-language fields of study around priority research areas. It also fits in with the internationalization strategy. The program of studies and staff consisting of academic teachers and outstanding researchers representing various scientific fields aims, among other things, to create appropriate conditions for undertaking joint research projects, which is in line with the NCU strategy for 2011-20 (Resolution No. 59, 2011), point A1.6; increasing the number of foreign students and participation of NCU students to scholarship programs, point B1.2, B1.3,

	creating an original educational offer, in line with the idea of the Bologna Process, point B 1.4, high-quality teaching. B 1.5. First of all, studies in the field of cognitive science are part of the second operational goals of the Nicolaus Copernicus University, mentioned in point B.2.1. i.e. making the educational offer more attractive with unique interdisciplinary studies.

Courses/course modules along with expected learning outcomes *

Course module	Course	Expected learning outcomes	Forms and methods of teaching ensuring the achievement of learning outcomes	Methods of verifying and assessing expected learning outcomes achieved by the student
Course module I Obligatory General Module	Advanced statistics Linear algebra - an introduction to data analysis Cognitive Psychology R Course Developmental Neuropsychology Network Neuroscience Theory of computation	The student knows an in-depth level of the terminology and can properly apply it. The student has an advanced knowledge about programming languages and can use it to program. The student knows an in-depth level of the research methods of cognitive sciences. The student has knowledge about computation and can properly apply it. The student has knowledge concerning neuropsychology and neurophysiology.	Expository teaching methods: - informative lecture - problem-based lecture - discussion -participatory lecture -programmed material Exploratory teaching methods: - laboratory - experimental - classic problem-solving - brainstorming - case study - practical - round table - project work - seminar - SWOT	Knowledge: graded credit -test -presentation of a paper Examination -written examination - oral examination Skills: - project defence - activity -homework -multimedia presentation

	Basic introduction to programming with Matlab and Octave Artificial Neural Networks Advanced Programming Machine learning Eye tracking in Cognitive Science	The student is capable of formulating and verifying hypotheses and argumentations. The student is able to communicate acquired knowledge according to scientific standards. The student is able to organise his own work and cooperates with others. The student is open to new ideas and accepts critical reviews of his work. The student is responsible and follows the ethical norms.		Social Competences -group project - research report assessment -participation in discussion
Course module II Project Module	Excellence Initiative – Research University Project A Excellence Initiative – Research University Project B	The student has advanced knowledge about research procedure and can project and conduct a scientific study.	project work	graded credit presentation of the project outcomes
Course module III Optional Subjects Module	Running a reproducible research project Bioethics	The student knows extensively the terminology of the chosen topics and can use it properly.	Classical lecture practical experimental laboratory	graded credit Knowledge:

(The student **chooses 9 from the optional courses)**	Development of Social Knowledge Digital Humanism Interpersonal skills training Philosophy of CS Reasoning on knowledge, norms and actions Computational neuroscience Cognitive logic Advances in logic for cognitive science Deep Science and Humanities Social Media and Text Analytics Formal models of mind and action	The student has an advanced knowledge about programming languages and can use it. The student has knowledge about the programming and mathematical basis of AI. The student knows different approaches to computational modelling of cognitive processes. The student knows the connection between humanities and science. The student can connect social phenomena with evolutionary and developmental approaches to cognition. The student can use proper formal tools in measurement and computation of the collected data. The student is tolerant, open-minded and understands ethical consequences of his action.	classic problem-solving observation panel field measurement presentation of a paper case study	-test -presentation of a paper -scientific essay - Quiz graded credit Skills: - project defence - activity -homework -multimedia presentation Social Competences: -group project - Research report assessment -participation in discussion

	(Biological) signal processing Gender, Brain, Cognition. Critical Analysis of Neuroscience Computer assisted qualitative data analysis			
Elective course module, e.g., university-wide courses or courses included in another field of study that are unrelated to a specific field of study	University-wide courses	The student is open to theories and conceptions stepping beyond his field of interests. The student is not afraid to express his own opinions.	Classical lecture Tutorial Laboratory	graded credit written exam oral exam scientific essay presentation project
Foreign language classes	English for Special Purposes II	The student is able to use English language in the field of science and scientific disciplines relevant to the field of study, in accordance with the requirements specified for the B2 + level of the European System for the Description of Languages	drama staging display practical	Detailed methods and assessment criteria applicable to individual teachers will be presented at the beginning of a given stage of learning. Exam - U01, U03 Oral exam - U02

				Colloquium - U01, U03
Diploma project and/ or diploma examination ***	Master Seminar	The student has deep and advanced knowledge concerning the chosen topic of his master thesis. The student can write scientific papers. The student can construct a theoretical and empirical reasoning. The students can design, perform and describe a scientific study. The student knows his ethical responsibility in reference to the originality of his work, citation, potential conflict of interests and bioethics.	seminar	graded credit -presentation of a paper Exam Master thesis

Internships**	
Duration of internships	**Not applicable**
Form of internships	
Rules of internships	

Detailed allocation of ECTS credits

Academic or artistic disciplines, to which learning outcomes refer:

	Artistic or academic discipline	**ECTS credits**	
		number	**%**
1.	Social Communication and Media Sciences	68	57%
2.	Psychology	12	10%
3.	Informatics	12	10%

4.	Mathematics	12	10%
5.	Biological Sciences	12	10%
6.	Philosophy	4	3%

Course modules	**Course**	**No of ECTS credits**	**No of ECTS credits in the discipline:** *(enter names of disciplines)*****						**No of ECTS credits for elective courses**	**No of ECTS credits obtained by the student in classes conducted with direct contact with the teacher or tutor**	**No of ECTS credits obtained by the student as a result of: courses related to academic activity within a discipline or disciplines to which the field of**
			Social Communication and Media Sciences	Psychology	Informatics	Mathematics	Biological Sciences	Philosophy			
Course module I Obligatory General Module	Advanced statistics	**4**				**4**			**0**	**2**	**2**
	Linear algebra - an introduction to data analysis	**4**				**4**			**0**	**2**	**2**
	Cognitive Psychology	**4**		**4**					**0**	**2**	**2**
	R Course	**4**			**4**				**0**	**2**	**4**

	Developmental Neuropsychology	**4**					**4**		**0**	**2**	**2**
	Network Neuroscience	**4**					**4**		**0**	**2**	**2**
	Theory of computation	**4**				**4**			**0**	**2**	**2**
	Basic introduction to programming with Matlab and Octave	**4**			**4**				**0**	**2**	**2**
	Artificial Neural Networks	**4**	**4**						**0**	**2**	**4**
	Advanced Programming	**4**			**4**				**0**	**2**	**4**
	Machine learning	**4**	**4**						**0**	**2**	**4**
	Eye tracking in Cognitive Science	**4**	**4**						**0**	**2**	**4**
Course module II Project Module	Excellence Initiative – Research University Project A	**4**	**4**						**4**	**3**	**4**
	Excellence Initiative – Research University Project B	**4**	**4**						**4**	**3**	**4**

Course module III Optional Subjects Module **Student chooses the optional courses to collect minimum 36 ECTS**	Running a reproducible research project	**4**	**4**						**36**	**2**	**4**
	Bioethics	**4**						**4**		**2**	**1**
	Development of Social Knowledge	**4**		**4**						**2**	**4**
	Digital Humanism	**4**	**4**							**2**	**1**
	Interpersonal skills training	**4**		**4**						**2**	**2**
	Philosophy of CS	**4**	**4**							**2**	**1**
	Reasoning on knowledge, norms and actions	**4**	**4**							**2**	**1**
	Cognitive logic	**4**	**4**							**2**	**1**
	Advances in logic for cognitive science	**4**	**4**							**2**	**1**
	Deep Science and Humanities	**4**	**4**							**2**	**1**
	Social Media and Text Analytics	**4**	**4**							**2**	**1**
	Computational Neuroscience						**4**			**2**	**3**

	Formal models of mind and action	**4**	**4**							**2**	**2**
	(Biological) signal processing	**4**					**4**			**2**	**3**
	Gender, Brain, Cognition. Critical Analysis of Neuroscience	**4**						**4**		**2**	**1**
	Computer assisted qualitative data analysis	**4**			**4**					**2**	**4**
Elective course module, e.g., university-wide courses or courses included in another field of study that are unrelated to a specific field of study	University-wide courses	**8**	**8**						**8**	**4**	**0**
Foreign language classes	English for Special Purposes II	**3**	**3**						**0**	**3**	**0**
Diploma project and/or diploma examination ***	Master Seminar	**17**	**17**						**0**	**10**	**10**
	IN TOTAL:	**120**	Min.68/ 57%	Min.12/ 10%	Min.12/ 10%	Min.12/ 10%	Min.12/ 10%	Min.4/ 3%	52/43%	**65/54%**	**60/50%**

This study programme is effective as of winter semester of the academic year 2021/2022.