

4.00 credits

30.0 h

Q1

Teacher(s)	Noël Marie-Pascale ;
Language :	French
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	The certification evaluation is carried out by a written exam containing mostly open questions requiring a short and precise answer. The exam may also include some multiple choice questions. During the September session, if a very small number of students are registered for the exam, the teacher may decide to propose an oral exam instead of a written exam.
Teaching methods	Lecture by the teacher.
Content	<p>Topics: Cognitive bases of numerical development in typical children and in people with dyscalculia- Proto-numerical tools in babies, including the analog line metaphor (or ANS: approximate number system)</p> <ul style="list-style-type: none"> - Counting (development of the verbal numerical chain) and enumeration (principles and development of sets counting) - Symbolic codes : - oral/written verbal numbers, arabic numbers, lexicon, syntax, transcoding - base 10 representation - Access to the magnitude of large numbers - Link between these basic numerical capabilities and arithmetic performance - Calculation : 1. o Sensitivity to additions-removals in babies; non-verbal calculations in infants, approximate calculation ; 2. o strategy development, Siegler's association distribution model, base 10 for complex calculations - word problem solving - Rational numbers: decimal numbers and fractions - Dyscalculia : 1. o definition, prevalence, difficulties presented, associations with other disorders, 2. o causal hypotheses (genetic contribution; role of general cognitive factors, deficit in basic numerical factors, etc.) 3. o neuro-functional correlates 4. - Rehabilitation and experimental training - Special issues that may be considered: 1. relationship between fingers and numbers ; 2. hypersensitivity to interference in arithmetic fact deficits; 3. deficit of the semantic representation of number in visuo-spatial dyspraxias.
Inline resources	Pdf documents corresponding to the slides of the course are available on moodle. Other ressource: a synthesis from INSERM http://www.ipubli.inserm.fr/bitstream/handle/10608/110/Synthese.html#titre_n1_10
Bibliography	Ouvrages de référence: 1. Noël, M.-P. & Karagiannakis, G. (2020). <i>Dyscalculie et difficultés d'apprentissage en mathématiques. Guide pratique de prise en charge</i> . De Boeck supérieur, Louvain-la-Neuve, Belgique, 317 pages, ISBN : 978-2-8073-1899-1 2. Noël, M.P. & Karagiannakis, G. (2022). <i>Effective teaching strategies for dyscalculia and learning difficulties in mathematics. Perspectives from cognitive neuroscience</i> . Routledge, New York, 303 pages, ISBN 9781032151434.
Other infos	Support: documents, powerpoint presentations etc available on Moodle, references to published articles; book in English can be used as a very good support for the course. The standard exam is a written exam in French. However, international students taking this course: <ul style="list-style-type: none"> • Will be allowed to use a dictionary when taking the written exam in French • Are provided with the opportunity to write all their answers in English

Faculty or entity in charge	ELOG
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Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Psychology and Education : Speech and Language Therapy	LOGO1BA	4		