

Basic information about the subject (independent of the cycle)

Module name	Mathematical learning difficulties in educational practice (MLD) 15CA
Erasmus code	
ISCED code	
Language of instruction	English
Website	
Prerequisites	Basic knowledge in developmental psychology
ECTS points hour equivalents	Contact hours (work with an academic teacher) 15 Consultations with an academic teacher 15 Total number of hours with an academic teacher 30 Number of ECTS points with an academic teacher 1 Non-contact hours (students' own work) 60 Total number of non-contact hours 60 Number of ECTS points for non-contact hours 2 Total number of ECTS points for the module 3
Educational outcomes verification methods	Coursework: MLD intervention tool design and its presentation to the group; specific guidelines will be provided during the course.
Description	The module covers main directions and ways of implementation of basic knowledge on mathematical learning difficulties into educational practice. During the course student gets to know about number sense development and its disturbances, analyzes main factors of mathematical school readiness; finds out about Math Anxiety and emotions involved in problem solving; gets to know some methods of MLD assessment, rules of intervention and building mathematical fluency in students with special needs.
Reading list	1. Blackmore S-J., Frith U. (2005). The Learning Brain. Lessons for Education. London: Blackwell Publishing. 2. Geake J. (2009). The Brain at School. Glasgow: Open University Press. 3. Mareschal D., Butterworth B., Tolmie A. (eds.) (2013). Educational Neuroscience. Oxford: Wiley Blackwell. 4. Nunes T., Bryant P. (1996). Children doing mathematics. Oxford: Blackwell Publishers.
Educational outcomes	KNOWLEDGE - student knows: 1.the theoretical background of math learning difficulties (MLD) 2. what are MLD main symptoms, clinical criteria,

	ways/tools of assessment and intervention SKILLS - student is able to: 1. identify MLD in primary education 2. implement knowledge on assessment and intervention into educational practice ATTITUDES - student: 1. understands his/her need of self-development in gaining knowledge related to education
Practice	

Information about classes in the cycle

Website	
Educational outcomes verification methods	Coursework: MLD intervention tool design and its presentation to the group; specific guidelines will be provided during the course.
Comments	Contact: u.oszwa@umcs.pl
Reading list	1. Butterworth B. (1999). The Mathematical Brain. London: MacMillan. 2. Gillum J. (2012). Dyscalculia: issues for practice in educational psychology. <i>Educational Psychology in Practice</i>, 28, 3, 287-297. 3. Kucian K., von Aster M. (2015). Developmental dyscalculia. <i>European Journal of Paediatrics</i>, 174, 1-13. 4. Nunes T., Bryant P. (1996). Children doing mathematics. Oxford: Blackwell Publishers.
Educational outcomes	KNOWLEDGE - student knows: 1. the theoretical background of math learning difficulties (MLD) 2. what are MLD main symptoms, clinical criteria, ways/tools of assessment SKILLS - student is able to: 1. identify MLD 2. implement knowledge on assessment and intervention into their own educational practice ATTITUDES - student: 1. understands his/her need of self-development related to education
A list of topics	1. Terminology - mathematical learning difficulties in the international classifications of diseases and disorders (DSM, ICD). 2. Specific and non-specific learning difficulties. 3. Differences and similarities between MLD

	and DD (developmental dyscalculia). 4. Mathematical cognition - stages in development. 5. Ideal Math teacher - main concept and characteristics, personality traits - students personal and educational experience. 6. Mathematical learning difficulties profiles and assessment batteries (DeDiMa, Zareki, Dyscalculia Screener). 7. Areas of mathematics for potential improvement. 8. Examples of the evaluated intervention tools for primary education students. 9. Types of the intervention tools: set of mathematical tasks for Math specific area, table game, computer-based game. 10. Rules and guidelines to design a simple intervention tool for MLD students.
Teaching methods	seminar, discussion, project, interactive lecture, explanation
Assessment methods	Coursework: MLD intervention tool design and its presentation to the group; specific guidelines will be provided during the course.