Module: Mathematics and Environment
Number of credits: 10
Subjects:
1) Mathematics Education and Methodology 1
2) Mathematics Education and Methodology 2
3) Environmental Education and Methodology
4) Health Education

Name of subject: Mathematics Education and Methodology 2 **Neptun code: OVOALB2029ANG**	**Credits**: 2

Subject Classification: Compulsory

Division of course content in theory and practice: 60% theory and 40% practice

Types and number of lessons: 5 lectures and 5 seminars per semester
Language: English
Other methods used during the course:

- digital course material provided through electronic learning system
- use of international literature
- course outline available electronically
- use of online internet resources

Method of assessment: Seminar Mark
Other means of learning evaluation:

- continuous, active participation during lessons
- written assessment of the acquired mathematical material
- preparation of games and mathematical tools for use in nursery groups
- collection of mathematical games and activities related to the topics of the semester
- completion of preschool activity week plan where they point out that maths is everywhere

Place of subject in the curriculum: fourth semester

Prerequisites: Mathematics Education and Methodology 1 **OVOALB1009ANG**

Course description:

Relations, functions, sequences. Applying them in nursery school activities: transformation games.
Geometry, measurement. Building - constructing, symmetry games, measuring activities.
Constructing games and activities - their mathematical role.
Geometry and spatial thinking. Space and shapes in two and three dimensions. The perception of different mathematical concepts.
Combinatorics, probability, statistics – basic situations. Data collection, board games, different mathematical opportunities in nursery school activities.
We represent some educational softwares, support pages, applications and educational programmes, which are well applicable for the target group. We also expound on good practices.

Required and recommended literature:

1. Pound, Linda (2008): *Thinking and Learning about Mathematics in the Early Years*. Routledge. Oxon. ISBN 978-0415432368
2. Zvonkin, Alexander K. (2011): *Maths from Three to Seven. The Story of Mathematical Circle for Preschoolers.* American Mathematical Society ISBN 978 0 8218 6873 7
3. Fisher, Robert (2011): *Brain Games for Your Child.* Souvenir Press. ISBN 978-0285640436
4. Palmér, Hanna & van Bommel, Jorryt (2017): *Exploring the role of representations when young children solve a combinatorial task.* Svensk förening för MatematikDidaktisk Forskning - SMDF, NORMA 17: Nordic Research in Mathematics Education / [ed] E. Norén, H. Palmér & A. Cooke, Göteborg.
5. Lukács Józsefné – Ferencz Éva (2010): *A játék nem csak játék!? Matematikai fejlesztőjátékok óvodásoknak.* Flaccus Kiadó, Budapest. ISBN 978 963 9412 81 1
6. Perlai Rezsőné (2016): *Matematika az óvodában. Kézikönyv óvodapedagógusok számára.* Flaccus Kiadó, Budapest.

Required competencies and competency elements that this subject contributes to and helps to develop

a) Knowledge

- Students possess the expert knowledge and teaching methodology which help to develop the health and personality of children aged 3-7 in a harmonious and complex way.
- Know the basic documents of preschool education and show awareness of the general aims and responsibilities of preschool education as well as the content of the different activity forms, and the connections between all these.
- Can apply the different planning schemes used in preschool education; know the theory and methodology of planning, and the connections specialities of the different levels of planning.
- Can understand the utmost significance of play in children's development.
- Can use different strategies and methodology to help the personal development of children aged 3-7 considering their age specific characteristics and individual pace of development.
- Can understand the connections between the different areas of education determining the development of children aged 3-7 such as spontaneous and planned effects of the environment, direct and indirect educational methods, and the learning processes present in preschool activity forms.
- Are familiar with the digital tools of knowledge acquisition, ICT-techniques, and problem solving methods in their specific field.

b) Capabilities

- Adapt their pedagogical, psychological, sociological and methodological expertise as well as a holistic approach to preschool education with consideration to the characteristics of the child and the child's age group.

- Understanding the characteristics of the age group, students should be able to identify and select the appropriate educational goals, tasks and content. Students should furthermore be able to manage, analyse, and evaluate the differentiated pedagogical process.
- Can build adaptively on the different personalities, previous experience, knowledge, competencies, and age specific characteristics of children aged 3-7.
- Can structure and analyse digitally collected information; and can see and interpret their connections.

c) Attitude

- Show commitment to developing strategies, methods and activities promoting the organization and expansion of the experience and knowledge of children aged 3-7, and to creating an environment promoting the success of English language communication in educational activities while inspiring, confirming the development of the child's personality.
- Their personality should be free from prejudice, and characterised by tolerance, social sensitivity, and helping attitude. They have an inclusive and multicultural approach, seek to preserve the cultural identity and support children's integration into their community.
- Accept the idea of child-centred inclusive preschool education and the view that pedagogical strategies used in preschool education should be tailored to the child's personality.
- Show commitment to the multifaceted analysis and evaluation of the process of preschool education and can review and revise future plans and activities in the light of the results.
- Show openness to learning about and applying the latest results of educational theory at home and worldwide, methodological innovations, as well as the latest information and communications technologies.
- Have an open-minded, innovative, and authentic attitude to welcome and transmit digital and technological development and innovation in their special field.

d) Autonomy and Responsibility

- Take responsibility for children aged 3-7, for the whole group of children, for their activities within the institution, for the decision made during the planning of the educational process and for all the consequences.
- Take responsibility for the personality development of children aged 3-7 in a harmonious and complex way, and for all the staff and equipment arrangements necessary to enhance healthy mental and physical development.
- As a reflective preschool teacher and autonomous personality, they are conscious leaders of their own professional development.
- Can develop their already existing digital competencies, skills and knowledge as well as acquire new competencies with the help of self-study or organised training programmes.
- Can plan and develop their digital literacy independently.

Responsible for course: Ágota Buzogány, college assistant lecturer
Other teacher involved in course: