

**(Table 5.2) Course unit description**

<b>Study program:</b> Preschool Teacher
<b>Type and level of studies:</b> Master Studies
<b>Course unit:</b> Mathematical Games
<b>Teacher in charge:</b> Nenad Milinković, Ph.D., Assistant Professor Marija Rančić, M.Ed., Teaching Assistant
<b>Language of instruction:</b> English
<b>ECTS:</b> 6
<b>Prerequisites:</b> /
<b>Semester:</b> Winter semester
<b>Course unit objective</b> Acquiring theoretical and practical knowledge about theory of games. Training students in independently planning, selecting, creating and performing gaming activities with children of preschool age in the function of development of mathematical education.
<b>Learning outcomes of Course unit</b> Understanding the function of game, its significance and roles it could achieve in the process of mathematical education in preschool period; capacity of students in planning and performing gaming activities in the function of mathematical education at preschool age.
<b>Course unit contents</b> <b>Theoretical classes</b> Conceptual definition of game. Didactical games. Upbringing and educational values of children's game and its significance in preschool child development. Function of games in preschool mathematical education. Types of games. Planning, organizing and performing of games. Game as a tool, method and way of work in preschool mathematical education. Games in the function of developing the elements of sets theory. Game in the function of developing the relations in space. Games in the function of developing concepts of natural numbers. Games in the function of developing the geometrical concepts and geometrical knowledge. Game in the function of developing the concepts in area of measurement and measures. Game and developing of children's creativity. Roles of preschool teacher in games. <b>Practical classes</b> Designing, creating and critical analysing of games in the aspect of child's development contribution in general, and development of initial mathematical concepts. Independent research work of students.
<b>References</b> Kamenov, E. (2009). <i>Dečja igra</i> . Beograd: Zavod za udžbenike. DošenDodub, A. (2016). <i>Dijete – istraživač i stvaralac: Igra, istraživanje i stvaranje djece rane i predškolske dobi</i> . Zagreb: Alinea. Peteh, M. (2008). <i>Matematika i igra za predškolce</i> . Zagreb: Alinea. Duran, M. (2003). <i>Dijete i igra</i> . Jastrebarsko: Naklada Slap. Костић, Ж. (1963). <i>Између игре и математике</i> , Београд. Марјановић, М. (2001). <i>Игре једначења: математика за децу предшколског узраста</i> . Београд: Завод за уџбенике и наставна средства. Маричић, С., Лазић, Б. (2017). Игра као потпорно средство у учењу у предшколском математичком образовању, у С. Маринковић (ур). <i>Културно-потпорна средства у функцији наставе и учења</i> (259-268). Ужице: Учитељски факултет

Goldberg, S. (2003). *Razvojne igre za predškolsko dijete: individualizirani program igre i učenja*. Lekenik: Ostvarenje.

Трнавац, Н. (1991). *Дидактичке игре*. ЗУНС, Београд.

Шимић, Г. (2000). *Играм до математике*. Шабац.

Tarson, F. (1997). Mathematical games. *Mathematics in School*, 26(4), 2-6. Mathematical Association.

Reed, K. E., & Young, J. M. (2017). Play games, learn math! Explore numbers and counting with Dot cards. *Teaching Young Children*, 11(1), 8–10.  
<https://www.naeyc.org/resources/pubs/tyc/oct2017/play-games-learn-math-explore-numbers>

Brito, R., Rocha, R., & Dias, P. (2023). Game-based learning in early childhood education: A systematic review. *Frontiers in Psychology*, 14, 1148372.

DePascale, M., & Ramani, G. B. (2025). The role of math games for children’s early math learning: A systematic review. *Early Childhood Research Quarterly*. Advance online publication.  
<https://doi.org/10.1016/j.ecresq.2025.100472>

Number of active teaching hours				Other classes
Lectures: 2	Practice: 2	Other forms of classes: /	Independent work	

**Teaching methods**  
 Lectures, exercises, seminars, consultations, discussion, independent research work

**Examination methods** (maximum 100 points)

Exam prerequisites	No. of points:	Final exam	No. of points:
student’s activity during lectures	10	written examination	50
practical classes/tests	20	oral examination	
seminars/homework			
project	20		
other			

Grading system		
Grade	No. of points	Description
10	91–100	Excellent
9	81–90	Exceptionally good
8	71–80	Very good
7	61–70	Good
6	51–60	Passing
5	Less than 51	Failing