Faculty of Education, University of Bialystok, Academic Year 2020/2021

Course: Basics of coding in early childhood education	ECTS Points: 2
Course Code: 0800-ERA-7GWO	
Language: English	
Course description: educational content – elective, optional course	
Lecturer: mgr Adam Naruszewicz	
Semester: summer	Number of hours: 15 Lecture: 0 Classes: 15

Courses to be completed before enrollment to the course:
Expert knowledge of computer skills is required.

Substantive content:
Basics of computer programming, computer games in education, developing children's coding skills.

Classes		**Number of hours**
1.	What is a coding in early education	1
2.	About computational thinking	1
3.	Base of computer programming	1
4.	Elements of programming in early childhood education	1
5.	Chosen computer games and applications for learning coding	2
6.	How to use a Scratch application	4
7.	Robots in early childhood education	4
8.	Summary	1

Aim of the course:
Developing students' knowledge and skills in terms of conducting classes about coding in early childhood education. Showing methods and tools for developing coding skills in children.

Teaching methods: e-learning, work in teams (groups), work in computer room (lab), presentations and instructional videos.

Literature:
[1] Bers, M. U. (2018). Coding and Computational Thinking in Early Childhood: The Impact of ScratchJr in Europe. European Journal of STEM Education, 3 (3), 08. https://doi.org/10.20897/ejsteme/3868
[2] Bers, M. U. (2018). Coding as a literacy for the 21st Century. Education Week.
[3] Bers, M. U., & Sullivan, A. (2019). Computer science education in early childhood: The case of ScratchJr. Journal of Information Technology Education: Innovations in Practice, 18, 113-138. https://doi.org/10.28945/4437
[4] Portelance, D.J., Strawhacker, A.L., & Bers, M.U. (2015). Constructing the ScratchJr programming language in the early childhood classroom. International Journal of Technology and Design Education, 26 (4), 489-504. Re-trieved from https://ase.tufts.edu/devtech/publications/Portelance-2015-Constructing-ScratchJr.pdf
[5] Sullivan, A., & Bers, M. U. (2016). Robotics in the early childhood classroom: Learning outcomes from an 8-week robotics curriculum in pre-kindergarten through second grade. International Journal of Technology and Design Education, 26 (1), 3-20. https://doi.org/10.1007/s10798-015-9304-5
[6] Wing, J. (2006). Computational thinking. Communications of the ACM, 49 (3), 33-36. https://doi.org/10.1145/1118178.1118215

Forms and conditions of credit:
active participation during the classes.