Course Syllabus

Code - Course Title	**OKÖ601 - Early Childhood Education and Artificial Intelligence**
Course Type	I. SEMESTER
Laboratory + Practice	3+0
ECTS	**7.5**
Language of Instruction	Türkçe
Course Type	Elective Courses
Course Instructor(s)	PROF. DR. NİL DUBAN

Mode of Delivery	Face to face
Prerequisites	None
Courses Recomended	AI-Supported STEAM Implementations in Early Childhood
Recommended Resources	Al Darayseh, A. (2023). Acceptance of artificial intelligence in teaching science: Science teachers' perspective. Computers and Education: Artificial Intelligence, 4, Article 100132.Al-Ansi, A. M., et al. (2023). Analyzing augmented reality (AR) and virtual reality (VR) recent development in education. Social Sciences & Humanities Open, 8(1), Article 100532. https://doi.org/10.1016/j.ssaho.2023.100532AlKanaan, H. M. N. (2022). Awareness regarding the implication of artificial intelligence in science education among pre-service science teachers. International Journal of Instruction, 15(3), 895–912. https://doi.org/10.29333/iji.2022.15348aChiu, T. K., Xia, Q., Zhou, X., Chai, C. S., & Cheng, M. (2023). Systematic literature review on opportunities, challenges, and future research recommendations of artificial intelligence in education. Computers and Education: Artificial Intelligence, 4, Article 100118. https://doi.org/10.1016/j.caeai.2022.100118Daher, W., Diab, H. & Rayan, A. (2023). Artificial intelligence generative tools and conceptual knowledge in problem solving in chemistry. Information, 14, 409. https://doi.org/10.3390/info14070409Shin, W. S., & Shin, D. H. (2020). A study on the application of artificial intelligence in elementary science education. Journal of Korean Elementary Science Education, 39(1), 117-132. https://doi.org/10.15267/keses.2020.39.1.117
Work Placement	none

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Paradigm Shift in Early Childhood Education: Fundamental principles of early childhood education, contemporary approaches, and changing educational paradigms	
Week - 2		Digitalization and Educational Transformation: Effects of digital technologies on education, childhood, and learning in the digital age	
Week - 3		Introduction to Artificial Intelligence: Concept, historical development, fundamental components, and educational applications of artificial intelligence	
Week - 4		Types of Artificial Intelligence Used in Education: Generative AI, machine learning, intelligent systems, and educational applications	

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 5		Artificial Intelligence Literacy: Components of AI literacy, ethical use, and critical evaluation skills	
Week - 6		AI-Supported Learning Environments: Characteristics and educational use of AI-supported learning environments	
Week - 7		Intelligent Tutoring Systems: Personalized learning, adaptive learning systems, and learning analytics	
Week - 8		AI Applications for Children: AI-based tools and applications used in early childhood education	
Week - 9		Digital Games and Learning: Game-based learning, educational digital games, and AI-supported game applications	
Week - 10		AI-Supported Instructional Design: Designing learning activities, materials, and instructional processes using AI tools	
Week - 11		Robotics and Coding Applications: Developing problem-solving skills through robotics and coding activities in early childhood	
Week - 12		Artificial Intelligence in Story Creation and Language Development: AI-supported storytelling, creative writing, and language development applications	
Week - 13		Audio-Visual Content Creation and Gamification: Developing AI-generated audio-visual content, gamification, and motivational applications	
Week - 14		Artificial Intelligence Applications in Early Childhood: Presentations and Evaluation: Presentation, discussion, and evaluation of AI-supported educational designs	

Learning Outcomes

#	Learning Outcome
1	Analyze the theoretical foundations of digital transformation and artificial intelligence-based approaches in early childhood education.
2	Evaluate AI-supported learning environments and applications used in early childhood education.
3	Develop AI-supported instructional designs and applications for early childhood education.

Sustainable Development Goals

No content has been provided.

Course Theme

No content has been provided.

AKTS Workload

Activity	Duration (Hour)	Count	Workload

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	0	0	0
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	0	0	0
Ödevler	0	0	0
Proje - Rapor - Sunum Hazırlama	0	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	0	0	0
Final Sınavı Hazırlığı (sınav süresi dahil)	0	0	0
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	0	0	0
Staj Uygulaması	0	0	0
		Calculated ECTS	**0**

Assessment Method and Passing Requirements

No content has been provided.

Assessment Method and Passing Requirements	Quamtity	Percentage (%)
1.Midterm Exam	1	40
Final Exam	1	60
	Sum (%)	**100**