AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Ict Based Science Teaching Applications - II								
Course Code	İFB532		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	The aim of the course is to deepen knowledge and skills of students about ICT applications in science education. In the course content, mainly application issues of ICTs will be instructed in the integration process.								
Course Content	Augmented reality, digital concept maps, simulations, virtual space training, Learning Management Systems (moodle, blackboard, etc.), Weebly, Robotics, Search engines, mobile technologies, data loggers, interactive white boards (IWBs), learning objects, educational software, digital security								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Eğitimde bilişim teknolojileri (Edt. Sami Şahin), Pegem Akademi Yayıncılık, 2016
2	Timur, B. & Özdemir (2018). Fen Eğitiminde Artırılmış Gerçeklik Ortamlarının Kullanımına İlişkin Öğretmen Görüşleri, Uluslararası Türk Eğitim Bilimleri Dergisi, s.10, 62-75
3	Sherriff, G., Benson, D. & Atwood, G.S. (2019), Practices, Policies, and Problems in the Management of Learning Data: A Survey of Libraries' Use of Digital Learning Objects and the Data They Create, The Journal of Academic Librarianship, 45(2), 102-109,
4	Çavuş, N. & Alhih, M.S. (2014). Learning management systems use in science education, Procedia - Social and Behavioral Sciences 143 (2014) 517 – 520
5	Kasinathan, G. & Ranganathan, S. (2018). How to integrate ICTs in the public education system, https://itforchange.net/how-to-integrate-icts-public-education-system
6	Digregorio, P. & Sobel-Lojeski, K. (2009-2010). The effects of interactive whiteboards (IWBs) on student performance and learning: A literature review. Journal of Educational Technology Systems, 38(3), 255-312.
7	Lateef F. (2010). Simulation-based learning: Just like the real thing. Journal of emergencies, trauma, and shock, 3(4), 348–352. doi:10.4103/0974-2700.70743

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to the course: general principles of the course, importance, informing the students about the target, content, process and evaluation
2	Theoretical	Definition and scope of information technologies
3	Theoretical	Augmented reality
4	Theoretical	Digital concept maps and their use in science education
5	Theoretical	Simulations and virtual space training
6	Theoretical	Learning management systems
7	Theoretical	Science education blogs and search engines
8	Intermediate Exam	midterm
9	Theoretical	Mobile technologies and data collectors in educational environments
10	Theoretical	Effective and efficient use of smart interactive white boards
11	Theoretical	Learning objects
12	Theoretical	Educational software
13	Theoretical	Writing and sharing and presenting a scientific report
14	Theoretical	Digital security
15	Theoretical	General Evaluation
16	Final Exam	final

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	5	10	0	50
Reading	5	9	0	45
Midterm Examination	1	10	2	12
Final Examination	1	20	3	23
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	1 Know and explain virtual reality and augmented reality
2	2 Use digital concept map (DCM) software and prepares concept maps via DCM
3	3 Know and use Learning Management Systems (LMS)
4	4 Explain robot and robotic concepts
5	5 Investigate and explain the contributions of robotics to education and learning process
6	6 Explain the advantages of mobile technologies in science education
7	7 Explain the using aim and process of learning objects in education

Programme Outcomes *(Science Education Master)*	
1	To be able to have an expert theoretical knowledge within the field of science educatıon.
2	To be able to transfer expert knowledge gained in science education into various instructional environment.
3	To be able to integrate science education knowledge with the other disciplines and product functional knowledge
4	To be able to use information and communication technologies efficiently in conceptual learning
5	To be able to find scientific solutions to the problems in the field of science education
6	To be able to evaluate the knowledge critically in the field
7	To be able to participate in team projects in the science education field
8	To be able to adopt lifelong learning strategies to his/her studies
9	To be able to use at least one foreign language efficently in oral and verbal communication
10	To be able to share national and international data in the field of science education
11	To be able to comprehend and evaluate science-technology-society and environment interactions
12	To be able to comprehends science under the ethical values and take account of ethical considerations
13	To be able to use scientific information in the other domains that is gained in the masters field and have the transfer skills
14	To be able to follow the current development in the science education field
15	To be able to develop strategical plans and evaluate them in the context of quality processes

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6	L7
P1	5	5	5	5	5	5	5
P2	4	4	4	4	4	4	4
P3	4	4	4	4	4	4	4
P4	4	4	4	4	4	4	4
P5	5	5	4	4	4	4	4
P6	5	4	4	4	4	5	4
P7	5	4	4	4	5	5	5
P8	4	4	4	4	5	5	5
P9	4	4	4	4	5	5	5
P10	4	5	4	4	5	5	5
P11	4	5	4	4	5	5	5
P12	4	5	4	5	5	4	5
P13	4	5	4	5	5	4	5
P14	4	5	4	5	5	4	4
P15	4	4	4	4	5	4	4