

## 21ST CENTURY SKILLS IN SCIENCE EDUCATION

1	Course Title:	21ST CENTURY SKILLS IN SCIENCE EDUCATION
2	Course Code:	FEN5120
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	English
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. DİLEK ZEREN ÖZER
15	Course Lecturers:	Doktorasını/uzmanlığını aynı alandan almış öğretim elemanları
16	Contact information of the Course Coordinator:	Bursa Uludağ Üniversitesi Eğitim Fakültesi Matematik ve Fen Bilimleri Eğitimi Bölümü Fen Bilgisi Eğitimi Anabilim Dalı A Blok Görükle /BURSA Tel: 0 224 2942254 E-posta: dzeren@uludag.edu.tr
17	Website:	
18	Objective of the Course:	To ensure that students who take this course have knowledge of what the 21st century skills and competencies are, to inform teachers and students about how these skills can be developed through science education, and to analyze the studies in the field of 21 years skills in science education, to present sample researches, and to present new researches. To provide planning of scientific research.
19	Contribution of the Course to Professional Development:	This course is the 7th Level (master's) of TYYÇ Basic field qualifications. At the information level, 7.1 and 7.2 At the skills level 7.1 At the competencies level Competencies-Competence to Work Independently and Take Responsibility 7.1 and 7.3 Competencies-Learning 7.1 Competencies-Communication and Social Competence 7.1 and 7.5 Competencies-Field-Specific Competence 7.3. It contributes to the development of basic field qualifications (TYYÇ).
20	Learning Outcomes:	
	1	Recognize 21st century skills.
	2	Designs activities to develop 21st century skills in science education.
	3	Knows and applies measurement and evaluation techniques for the development of 21st century skills.

	4	Designs a scientific research on 21st century skills.		
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21	Course Content:			
	Course Content:			
Week	Theoretical	Practice		
1	Meeting, creation of student study groups, presentation of course content, content and evaluations			
2	learning and renewal skills innovation, creativity and renewal			
3	learning and renewal skills • communication and collaboration • critical thinking and problem solving			
4	Information; media and technology skills • information literacy • media literacy			
5	Information; media and technology skills			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical Entrepreneurship and self-management		14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self study and preparation		0	0.00	0.00
8	(c) Life and career skills	0	0.00	0.00
Homeworks		1	35.00	35.00
9	(c) life and career skills	0	0.00	0.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		1	25.00	25.00
Others		0	0.00	0.00
Final Exams		1	25.00	25.00
12	Analysis of studies in the field of 21-year skills			
Total Work Load				138.00
Total work load/30 hr				3.77
ECTS Credit of the Course				4.00
	in science education (literature analysis), presentation of sample studies and planning of new scientific research			
14	Analysis of studies in the field of 21-year skills in science education (literature analysis), presentation of sample studies and planning of new scientific research			

<b>22</b>	Textbooks, References and/or Other Materials:	Gelen, İ. (2017). P21-Program ve öğretimde 21. yüzyıl beceri çerçeveleri (ABD Uygulamaları). Disiplinlerarası Eğitim Araştırmaları Dergisi, 1(2), 15-29. Yalçın, S. (2018). 21. yüzyıl becerileri ve bu becerilerin ölçülmesinde kullanılan araçlar ve yaklaşımlar. Ankara University Journal of Faculty of Educational Sciences (JFES), 51(1), 183-201. Gürültü, E., Aslan, M., & Bülent, A. L. C. I. (2019). Ortaöğretim öğretmenlerinin 21. yüzyıl becerileri kullanım yeterlikleri. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 35(4), 780-798. DÜZGÜNER, T. T., KARABULUT, H., & KARİPER, A. 21. YÜZYIL BECERİLERİ İLE İLGİLİ YAPILMIŞ OLAN ÇALIŞMALARIN İNCELENMESİ. Kırıkkale Üniversitesi Sosyal Bilimler Dergisi, 12(1), 179-199.
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<b>23</b>	Assesment
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	10.00
Quiz	0	0.00
Home work-project	1	30.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course	Homework and traditional measurement and evaluation methods are used.	

<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
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<b>25</b>	<b>CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS</b>															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	1	1	4	1	2	3	2	1	0	0	0	0	0	0	0
ÖK2	3	4	5	2	5	2	3	4	3	0	0	0	0	0	0	0
ÖK3	5	2	2	2	3	4	4	2	5	0	0	0	0	0	0	0
ÖK4	3	5	5	4	5	4	5	4	5	0	0	0	0	0	0	0
<b>LO: Learning Objectives    PQ: Program Qualifications</b>																
<b>Contribution Level:</b>	<b>1 very low</b>		<b>2 low</b>		<b>3 Medium</b>		<b>4 High</b>		<b>5 Very High</b>							