

ALTERNATIVE MEASUREMENT AND EVALUATION IN SCIENCE EDUCATION

1	Course Title:	ALTERNATIVE MEASUREMENT AND EVALUATION IN SCIENCE EDUCATION
2	Course Code:	FEN0112
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	3
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:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. DİLEK ZEREN ÖZER
15	Course Lecturers:	
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 introduce and differentiate alternative measurement and evaluation methods to students. To provide students with the ability to apply alternative assessment methods such as performance tasks, portfolio, project-based learning. To ensure that students understand the methods of monitoring and evaluating their learning processes. To convey to students the advantages and limitations of alternative assessment methods. To provide students with information about the evaluation of group work and collaborative learning. To explain to students the importance of the formative evaluation process and to provide information about formative evaluation tools.

19	Contribution of the Course to Professional Development:	This course is at the Knowledge level of TYYÇ Basic Field Competencies, 1-Based on the qualifications gained in secondary education; Understands the concepts related to the field and the relationships between concepts. 4-Has knowledge of teaching programs related to the field, teaching strategies, methods and techniques, and measurement and evaluation. In the skills level, 2-Conceptualizes events and facts related to the field, examines them with scientific methods and techniques, interprets and evaluates the data. 6-Evaluates the student's achievements in a versatile way using different methods. Competencies in the Competencies level - Competency to Work Independently and Take Responsibility 1-Takes responsibility in individual and group work and carries out the assigned task effectively. Competencies-Learning competency 1-Evaluates the acquired knowledge and skills with a critical approach. 2-Identifies learning needs and directs learning. Competencies-Communication and Social Competencies 7-Uses information and communication technologies at the advanced level of the European Computer Usage License. It contributes to the development of basic field competencies (TYYÇ). In addition, according to the Ministry of Education's General Competencies for the Teaching Profession, this course includes A1.1, A1.2, A1.1 from A1 level qualifications, A2.5 from A2 level qualifications, and B3.9 from B3 level qualifications. Among the B4 level qualifications, B4.1., B4.2., B4.3., B4.4. and B4.5. contributes to the development of their competencies.	
20	Learning Outcomes:		
		1	Students recognize and understand the differences between traditional assessment methods as well as alternative methods such as performance tasks, portfolio creation, project-based learning and authentic assessment.
		2	Students develop skills in creating and using assessment tools such as rubrics, scales, and formative assessment tools.
		3	Students gain the ability to follow their learning processes, evaluate their learning progress using measurement tools, and analyze these evaluations.
		4	ains competence in evaluating group work and collaborative learning processes and develops the ability to evaluate intra-group interactions.
		5	Acquires the ability to apply authentic evaluation methods to real-life problems and make realistic and practical evaluations in this context.
		6	Students gain the ability to critically evaluate the alternative evaluation methods they have learned.
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21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	
1	Meeting, formation of student study groups, introduction of course scope, content and evaluations Week 1: What is Alternative Evaluation? Definition and importance of alternative measurement and evaluation. Differences between traditional and alternative measurement. Student-centered assessment methods.		

2	<p>Week 2-3: Performance Tasks and Rubrics</p> <ul style="list-style-type: none"> • Definition and characteristics of performance tasks. • Design and use of rubrics. • Evaluating student performance with rubrics. 	
3	<p>Week 2-3: Performance Tasks and Rubrics</p> <ul style="list-style-type: none"> • Definition and characteristics of performance tasks. • Design and use of rubrics. • Evaluating student performance with rubrics. 	
4	<p>Week 4-5: Portfolio Evaluation</p> <ul style="list-style-type: none"> • Portfolio concept and its importance. • Students' portfolio creation process. • Portfolio evaluation criteria and monitoring of student progress. 	
5	<p>Week 4-5: Portfolio Evaluation</p> <ul style="list-style-type: none"> • Portfolio concept and its importance. • Students' portfolio creation process. • Portfolio evaluation criteria and monitoring of student progress. 	
6	<p>Week 6-7: Project-Based Learning and Assessment</p> <ul style="list-style-type: none"> • Project-based learning approach and features. • Evaluation of students' project-based work. • Measuring student success in the project-based learning process. 	
7	<p>Week 6-7: Project-Based Learning and Assessment</p> <ul style="list-style-type: none"> • Project-based learning approach and features. • Evaluation of students' project-based work. • Measuring student success in the project-based learning process. 	
8	<p>Week 8-9: Authentic Evaluation</p> <ul style="list-style-type: none"> • The concept and characteristics of authentic evaluation. • Use of authentic assessment tools and measurement methods. • Authentic real-life evaluation examples. 	
9	<p>Week 8-9: Authentic Evaluation</p> <ul style="list-style-type: none"> • The concept and characteristics of authentic evaluation. • Use of authentic assessment tools and measurement methods. • Authentic real-life evaluation examples. 	
10	<p>Week 10-11: Collaborative and Group Evaluation</p> <ul style="list-style-type: none"> • Evaluation of group work and collaborative learning. • Measuring intra-group interactions and contributions. • Methods used to evaluate group performance. 	
11	<p>Week 10-11: Collaborative and Group Evaluation</p> <ul style="list-style-type: none"> • Evaluation of group work and collaborative learning. • Measuring intra-group interactions and contributions. • Methods used to evaluate group performance. 	

12	Week 12-13: Formative Assessment • Formative evaluation process and purpose. • Formative assessment tools and techniques. • The role of formative assessment in the student learning process.	
13	Week 12-13: Formative Assessment • Formative evaluation process and purpose. • Formative assessment tools and techniques. • The role of formative assessment in the student learning process.	
14	Week 14: Application and Evaluation of Alternative Evaluation Methods • Evaluating the effectiveness of alternative assessment methods applied to students. • Developing alternative evaluation methods with student feedback and teacher observations.	

22	Textbooks, References and/or Other Materials:	<p>McMillan, H. J. (2015) Sınıf içi değerlendirme. Konya: Eğitim yayınevi.</p> <p>• Küçük, M. ve Geçit, Y. (Editörler), 2012; Eğitimde ölçme ve değerlendirme. Ankara: Nobel yayıncılık</p> <p>• Atılğan, H, Kan, A. ve Doğan, N. (2009). Eğitimde ölçme ve değerlendirme. Ankara: Anı yayıncılık</p> <p>• Tekin, H. (2000). Eğitimde Ölçme ve Değerlendirme. Ankara: Yargı Yayınevi</p> <p>• Turgut M.F. (1995). Eğitimde Ölçme ve Değerlendirme Metotları. Ankara: Yargıcı Matbaası.</p> <p>• Bahar,M, Nartgün, Z, Durmuş, S. ve Bıçak, B.(2006). Geleneksel-Alternatif Ölçme ve Değerlendirme. Pegema Yayıncılık. Ankara</p> <p>• Çepni, S., Akyıldız,. S. (Editörler), 2009; Ölçme ve Değerlendirme, Celepler Matbaacılık, TrabzonKarip, E. (Ed.), 2007; Ölçme ve Değerlendirme, Pegem Yayıncılık, Ankara</p> <p>• Miller, M. D., Linn, R., & Gronlund, N. (2009). Measurement and evaluation in teaching. New Jersey, Pearson Education, Inc</p> <p>• Airasian, P. W., and Russell, M. K. (2008) Classroom Assessment: Concepts and Applications. New York: Mc Graw- Hill Higher Education.</p> <p>• Atılğan, H.,Kan, A., and Doğan, D. (2007) Eğitimde Ölçme ve Değerlendirme. Ankara: Anı Yayıncılık.</p> <p>• Nitko, A.J., and Brookhart, S. M. (2007) Educational assessment of Students. New Jersey: Pearson.</p> <p>• Turgut, M.F. ve Baykul, Y. (2010) Eğitimde Ölçme ve Değerlendirme Metotları. Ankara: PegemA yayınları.</p>
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23	Assesment		
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT
Midterm Exam		1	15.00
Quiz		0	0.00
Home work-project		5	25.00
Final Exam		1	60.00
Total		7	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	In this course, cooperative learning and active learning methods are applied based on a case study with the 3e model: Assignments will be given according to each measurement and evaluation tool during the semester. In these assignments, students will be enabled to develop and evaluate measurement tools. As a result of these assignments, students taking the course will learn what to pay attention to in classroom evaluations in the form of active learning. At the end of the course, students will be evaluated as a relative evaluation.
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24	ECTS / WORK LOAD TABLE
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Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	5	15.00	75.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	5.00	5.00
Others	0	0.00	0.00
Final Exams	1	5.00	5.00
Total Work Load			113.00
Total work load/ 30 hr			3.77
ECTS Credit of the Course			4.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	1	1	5	5	1	1	5	5	4	1	1	1	1	5	5	3
ÖK2	1	1	5	5	1	5	5	5	4	1	1	1	1	5	5	3
ÖK3	1	1	5	5	1	5	5	5	4	1	1	1	1	5	5	5
ÖK4	1	1	5	1	1	5	5	5	5	1	5	1	1	5	5	5
ÖK5	1	1	5	1	1	5	5	5	5	1	5	1	1	5	5	5
ÖK6	1	3	5	1	1	5	5	5	5	1	2	1	1	5	5	5
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							