

# SCIENCE AND TECHNOLOGY IN THE MEDIEVAL

1	Course Title:	SCIENCE AND TECHNOLOGY IN THE MEDIEVAL
2	Course Code:	OCA5119
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. DERYA ŞAHİN
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Prof. Dr. Derya Şahin Uludağ Üniversitesi Fen-Edebiyat Fakültesi Arkeoloji Bölümü Görükle- Bursa 16059 0.224.2941892 e-mail: dsahin@uludag.edu.tr
17	Website:	
18	Objective of the Course:	This course aims to explore the development of scientific thought and the impact of technological innovations on medieval society.
19	Contribution of the Course to Professional Development:	Students will examine scientific discoveries, engineering, medicine, astronomy, mathematics, and other technological advancements of the medieval period, gaining an understanding of how knowledge was shaped during this time and how it contributed to modern science. Additionally, the course will discuss the relationship between these scientific and technological developments and the cultural and religious structures of the period.
20	Learning Outcomes:	
	1	Students will learn about the evolution of scientific thought in the Medieval period, key discoveries, and their impact on society, gaining an understanding of the scientific contributions of the era.
	2	Students will analyze the technological innovations of the Medieval period and their effects on daily life, agriculture, industry, and medicine, discussing their role in shaping social structures.
	3	Students will explore how scientific and technological advancements in the Medieval period were influenced by and, in turn, impacted cultural and religious frameworks, understanding the social, cultural, and religious factors in the development of scientific thought.
	4	
	5	
	6	
	7	
	8	
	9	

		10		
21	Course Content:			
	Course Content:			
Week	Theoretical	Practice		
1	Introduction to Science and Technology in the Medieval Period <ul style="list-style-type: none"><li>• The impact of the Medieval period on scientific and technological thought</li><li>• Overview of science and technology in the Medieval era</li><li>• The transition from Ancient to Medieval science</li></ul>			
2	Scientific Method and Thought in the Medieval Period <ul style="list-style-type: none"><li>• Scientific understanding and philosophy in the Medieval period</li><li>• Natural philosophy and logic</li><li>• The beginnings of the scientific method and experimental research</li></ul>			
3	Medieval Astronomy <ul style="list-style-type: none"><li>• Astronomy and astronomical concepts in the Medieval period</li><li>• Ptolemaic model of the universe and Medieval astronomers</li><li>• Astronomical observations and calendar</li></ul>			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical period <ul style="list-style-type: none"><li>• Hindu-Arabic numerals and calculation</li></ul>		14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self study and preparation <ul style="list-style-type: none"><li>• The development of mathematical thinking and geometry</li></ul>		14	4.00	56.00
Homeworks		2	20.00	40.00
5	ProjectsMedieval Medicine	0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm Exams <ul style="list-style-type: none"><li>• Ancient medical knowledge and Medieval</li></ul>		0	0.00	0.00
Others		0	0.00	0.00
Final Examsdiseases		1	20.00	20.00
Total Work Load				144.00
6	Engineering and Construction Technologies <ul style="list-style-type: none"><li>• Engineering and construction techniques in</li></ul>			4.80
ECTS Credit of the Course				5.00
	The construction of cathedrals and Gothic architecture engineering knowledge <ul style="list-style-type: none"><li>• Aqueducts, bridges, and other engineering projects</li></ul>			
7	Medieval Agriculture and Technological Innovations <ul style="list-style-type: none"><li>• Tools and machines used in Medieval agriculture</li><li>• Technological advancements in Medieval farming</li><li>• Watermills and windmills</li></ul>			

8	Mining and Metallurgy in the Medieval Period <ul style="list-style-type: none"><li>• Medieval mining and methods of extracting minerals</li><li>• Blacksmithing and metalworking</li><li>• New metallurgical techniques and technological advancements</li></ul>	
9	Military Technology and Weapons in the Medieval Period <ul style="list-style-type: none"><li>• Military technologies of the Medieval period: Shields, archery, siege engines</li><li>• War strategies and defense systems</li><li>• The evolution of Medieval weaponry</li></ul>	
10	Paper and Written Works in the Medieval Period <ul style="list-style-type: none"><li>• Medieval writing and the importance of manuscripts</li><li>• The production of paper, early use of writing machines, and the printing press</li><li>• The artistic and scientific role of Medieval manuscripts</li></ul>	
11	Science and Technology in the Islamic World <ul style="list-style-type: none"><li>• The Islamic Golden Age and its scientific contributions</li><li>• Astronomy, medicine, mathematics, and engineering in Medieval Islam</li><li>• The influence of Islamic scholars on Medieval Europe</li></ul>	
12	Science and Technology in Medieval Europe <ul style="list-style-type: none"><li>• The development of scientific thought in Medieval Europe</li><li>• Scholasticism and the influence of religion</li><li>• Foundations of scientific and technological revolutions in Europe</li></ul>	
13	The Social Impact of Science and Technology in the Medieval Period <ul style="list-style-type: none"><li>• The societal impact of scientific and technological advancements</li><li>• Changes in education, professions, and daily life</li><li>• The relationship between scientific knowledge and religion</li></ul>	
14	General Review	
22	Textbooks, References and/or Other Materials:	<ul style="list-style-type: none"><li>• Güven, Ali - Ortaçağ'da Bilim ve Teknoloji (2005)</li><li>• Karaca, İsmail - Ortaçağ'da İslam Bilimleri (2012)</li><li>• Meyer, Albrecht - Medieval Science and Technology (2003)</li><li>• Öztürk, Nihan - Ortaçağ Avrupa'sında Bilimsel Düşünce (2010)</li><li>• Baker, Robert - Science and Technology in the Medieval World (2015)</li></ul>
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBE R
Midterm Exam		0
Quiz		0
Home work-project		0
Final Exam		1
		WEIGHT
		0.00
		0.00
		0.00
		100.00

Total	1	100.00
Contribution of Term (Year) Learning Activities to Success Grade	0.00	
Contribution of Final Exam to Success Grade	100.00	
Total	100.00	
Measurement and Evaluation Techniques Used in the Course	The system of relative evaluation is applied.	

<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
-----------	-------------------------------

<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	3	1	1	5	3	1	5	3	1	0	0	0	0	0	0	0
ÖK2	3	1	1	5	3	1	5	3	1	0	0	0	0	0	0	0
ÖK3	3	1	1	5	3	1	5	3	1	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>							