

## SECONDER METABOLITES

1	Course Title:	SECONDER METABOLITES	
2	Course Code:	KIM5060	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
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:	Doç. Dr. ASLI GÖÇENOĞLU SARIKAYA	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	Doç. Dr. Aslı GÖÇENOĞLU SARIKAYA agocenoglu@uludag.edu.tr Bursa Uludağ Üniversitesi Fen Edebiyat Fakültesi Kimya Bölümü, Görükle-Bursa, 16059	
17	Website:		
18	Objective of the Course:	The aim of the course is to give students a comprehensive background on important microbial secondary products and their production, along with their advantages and disadvantages.	
19	Contribution of the Course to Professional Development:	To learn important microbial secondary products and their production.	
20	Learning Outcomes:		
		1	Knows the difference between primary and secondary metabolites
		2	Have knowledge about secondary metabolite production processes
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21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	Secondary metabolite concept		
2	Primary metabolism		
3	Secondary metabolism		
4	Basic reactions that take place in secondary metabolism		

5	Antibiotics and other biologically active microbial metabolites	
6	Biology of secondary metabolite producing microorganisms	
7	Investigation of new secondary metabolites from microorganisms	
8	Synthesis of secondary metabolites	
9	Strain development and process development	
10	Biological transformations	
11	Synthesis and regulation of antibiotics	
12	Pigment production	
13	Production of polypronaoids and alkaloids	
14	Production of polyketides and tepenoids	

22	Textbooks, References and/or Other Materials:	Biotechnology Secondary Metabolites: Plants and Microbes (Second Edition) edited by K.G. Ramawat and J.M. Merillon Science Publishers, 2007. Biotechnology of Antibiotics and other Bioactive Microbial Metabolites by G. Lancini, R. Lorenzetti, Springer; 1st Edition, 1993
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23	Assesment
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TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT		
Midterm Exam		1	40.00		
Quiz		0	0.00		
Activites		Number		Duration (hour)	Total Work Load (hour)
Total Theoretical		2	100.00	3.00	42.00
Practicals/Labs		0	0.00	0.00	0.00
Self study and preperation		14	6.00	84.00	
Contribution of Final Exam to Success Grade		60.00			
Homeworks		0	0.00	0.00	0.00
Total Projects		0	0.00	0.00	0.00
Field Studies		0	0.00	0.00	0.00
Midterm exams		1	20.00	20.00	
<b>24 ECTS / WORK LOAD TABLE</b>					
Others		0	0.00	0.00	0.00
Final Exams		1	30.00	30.00	
Total Work Load					176.00
Total work load/ 30 hr					5.87
ECTS Credit of the Course					6.00

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	4	4	5	5	5	5	5	4	5	4	0	0	0	0	0	0
ÖK2	4	4	5	5	5	5	5	4	5	4	0	0	0	0	0	0
LO: Learning Objectives    PQ: Program Qualifications																
Contrib ution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							