BIOMIMETIC APPLICATIONS IN TEXTILES

1	Course Title:	BIOMIMETIC APPLICATIONS IN TEXTILES	
2	Course Code:	BYT5015	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	1	
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:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. DİLEK KUT	
15	Course Lecturers:	Prof.Dr.Y.Dilek KUT	
16	Contact information of the Course Coordinator:	Prof.Dr.Y.Dilek KUT BUÜ Mühendislik Fakültesi Tekstil Mühendisliği Bölümü dilek@uludag.edu.tr 0224 294 20 49/61	
17	Website:		
18	Objective of the Course:	Biotechnology, to examine theoretically Biomimetics, To examine theoretically Supporting theoretical approaches with textile application examples Developing new approaches	
19	Contribution of the Course to Professional Development:	To raise awareness about the environmental effects of textile production	
20	Learning Outcomes:		
		1	Ability to work in an interdisciplinary field
		2	Ability to identify and solve engineering problems in biotechnology and biomimetry using the most up-to-date technical and informatics tools.
		3	Gaining knowledge about sustainability approaches
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	What is Biotechnology? What are the Fundamentals of Biotechnology?	

2	Biotechnology Application Examples in Textile Enzymes and enzyme structures used	
3	Enzyme immobilization	
4	Enzymatic Desizing and Hydrophilizing Process	
5	Enzyme Use in Bleaching Processes	
6	Enzyme use in natural fiber biopolishing	
7	Enzyme use in Denim Fabric	
8	What is Biomimetry? What is Nano Technology?	
9	What is the Importance of Biomimetic Approaches in Textile Applications?	
10	Lotus Effect-Self cleaning surfaces	
11	Shark Skin Effect-reduce to friction and hydrophobic surfaces	
12	Geco Effect-Ensuring the adhesion effect	
13	Morpho Butterfly Wing Effect- Color acquisition without using pigments	
14	Cone Effect-Breathable surfaces	

22	Textbooks, References and/or Other Materials:	Unpublished lecture notes-Prof.Dr.Y.Dilek KUT Current Literature and publications
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	1	40.00
Final Exam	1	60.00
Total	2	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		1 Homework work, 1 Final exam

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	96.00	96.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
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	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High