MULTICOMPONENT FIBER TECHNOLOGY

1	Course Title:	MULTICOMPONENT FIBER TECHNOLOGY
2	Course Code:	TEK3106
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	6
7	ECTS Credits Allocated:	3.00
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:	Doç. Dr. Semiha EREN
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	semihaeren@uludag.edu.tr Tel. +90.0.224.2755280 Adres: Bursa Uludağ Üniversitesi Mühendislik Fakültesi Tekstil Mühendisliği Bölümü 16059 Nilüfer Bursa, Türkiye.
17	Website:	
18	Objective of the Course:	To comprehend the production parameters and production methods of multicomponent fibers, To have knowledge about the usage areas of these fibers, To learn about new technology fibers by following the technological developments in multicomponent fibers.
19	Contribution of the Course to Professional Development:	Understanding the production of multi-component fibers, understanding their properties and uses, recognizing bicomponent fiber types, selection of components Comprehending the relations between production parameters and yarn properties in component yarns To be able to follow technological developments in multi-component yarns
20	Learning Outcomes:	

	1	Understanding the production of multi-component fibers,
	2	Understanding their properties and uses, recognizing bicomponent fiber types, selection of components
	3	Comprehending the relations between production parameters and yarn properties in component yarns
	4	To be able to follow technological developments in multi-component yarns
	5	To be able to work in teams or individually and to transfer information using presentation techniques
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21	Course Content:

Course Content:	

Week	Theoretical	Practice
1	Determination of Meeting / Student Meeting Hours Introducing the Resources to be Followed, Explaining the Teaching Method of the Course Explanation of Assessment Method and Preparation of Homework Introduction to synthetic fiber production (Fiber spinning methods, Melt spinning method, spinneret, filter etc.)	
2	1. Description of multicomponent fibers 2. Necessity of multicomponent fibers 3.Multi-component fiber types (Editeonent fiber types	
3	1. Description of bicomponent fiber 2.Bicocomponent fiber production parameters Surface tension, Viscosity, Elasticity, Solidification rate, Deborah number, shear rate, flow performance, molecular weight	
4	1. production parameters of Bicomponent fiber • Effect of extruder, spinneret, draft ratio, interface, component ratios on fiber properties in bicomponent fibers	

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	14	1.00	14.00
Homeworks	1	14.00	14.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	12.00	12.00
Others	1	10.00	10.00
Final Exams	1	12.00	12.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

Week	Theoretical	Practice
	island) • Pie slice (divided) 2. Microfiber and nanofiber production with bicomponent fiber	
10	1. Usage areas of bicomponent fiber (binder in nonwovens, artificial suede and leather fabric production etc.) 2. Liquid core bicomponent fibers (optical, self-healing and membrane applications of liquid filled fibers.) 3.Self-crimped bicomponent fibers 4. Doped bicomponent fibers	
11	1. Production and usage area of trichocomponent fibers	
12	1. Production of bicomponent fibers laboratory application	

13	1. Production laboratory of bicomponent fibers - Operation trip	
14	Examination of monocomponent fiber and bicomponent fiber samples-discussion of homework	

| 22 | Textbooks, References and/or Other Materials: | 1. Ders notları (öğretim üyesi tarafından hazırlanmış)
2. Lewin M. Preston J.," Handbook of Fiber Science and Technology" Volume3: High Technology Fibers: Part D, CRC Press
3. M M Houck, "Identification of Textile Fibers", Woodhead Publishing, 2009.
4. Mohammadreza Naeimirad N.et al.,"Recent advances in core/shell bicomponent fibers and nanofibers: A review, J. Appl. Polym. Scı. 2018.
5. Steven B. Warner, "Fiber science", New Jersey: Prentice Hall , 1995.
6. Eren S. EMR (Elektromanyetik radyasyon) koruma amaçlı bikomponent polyester iplik üretimi Doktora tezi, Bursa.
7. Fourne F. "Synthetic Fibers", Hanser, 1999
8. Uluslararası hakemli dergilerde İngilizce yayınlanmış makaleler. |

| 23 | Assesment | |

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	30.00
Quiz	0	0.00
Home work-project	1	10.00
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	WRITTEN EXAM PROJECT PERFORMANCE HOMEWORK	

24	ECTS / WORK LOAD TABLE

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	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	5	5	0	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