Fizik Bölümü / PHYSICS /						
Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FZK-4037	Wind Energy Physics	3.00	0.00	0.00	3.00	6.00
Course Detail						
Course Language	: Turkish					
Qualification Degree	: Bachelor					
Course Type	: Optional					
Preconditions	: Not					
Objectives of the Course	: It is aimed to teach wind energy and its applications.					
Course Contents	: Wind definition, the use of wind energy, wind power plants, sample applications on	Earth.				
Recommended or Require Reading	ed : Güç Sistemlerinde Rüzgâr Gücü, Thomas, Ackermann. 2009, Rüzgar enerjisi Teori	ve Uygulama., N	/lurat Durak- Se	erra Özer 2008		
Planned Learning Activiti Teaching Methods	es and : Lecture, homework, application					
Recommended Optional Programme Components	: Current research topics for student.					
Instructors	: Prof. Dr. Caner Çiçek					
Instructor's Assistants	: No					
Presentation Of Course	: Face to face					

Course Outcomes

## Upon the completion of this course a student :

1 Learns the definition of wind. Knows the current and historical development of wind power

 $2\,\text{Learns the designs for wind turbines.} \,\text{knows turbines and detects the introduction to power electronics for wind}$ 

3 Learns the effect and application of wind power among new energy sources.

 $4\,\mbox{Learns}$  the wind power efficiency. It works on the efficiency effect.

 $5\,\mbox{Learns}$  new information about wind energy engineering.

Preconditions

Course Code Course Name Teorical Practice Laboratory Credits ECTS

Weekly Co	ontents				
	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods
1.Week	*Introduction to the concept of wind				
2.Week	*Historical development and current state of wind power				
3.Week	*Wind Power in Power Systems.				
4.Week	*Generators and Power Electronics for Wind Turbines				
5.Week	*Power Quality Standards for Wind Turbines				
6.Week	*Technical Regulations for Connecting Wind Farms to Power Systems				
7.Week	*Value of Wind Power				
8.Week	*Midterm exam				
9.Week	*Example of Germany for wind power.				
10.Week	*Wind Power for USA				
11.Week	*Economic Aspects of Wind Power in Power Systems.				
12.Week	*Application of wind power in Turkey.				
13.Week	*Wind Power in Regions with Limited Production Capacity				
14.Week	*Wind power market.				

Assesment Methods %			
1 Mid Term Exam 1 : 40.000			
2 Final : 60 000			

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Vize	1	3.00	3.00
Final	1	3.00	3.00
Individual study before lecture	14	3.00	42.00
Individual study after lecture	14	3.00	42.00
Class Hours (14 weeks)	14	3.00	42.00
Preparation for midterm	1	18.00	18.00
Preparation for final	1	20.00	20.00
		Total	. 170.00

Total: 170.00

Sum of Workload / 30 ( Hour ): 6

ECTS: 6.00

Program And Outcor	meRelation
--------------------	------------

	P.O.	1 P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24
L.O. 1	2	3	2	3	3	3	3	1	2	3	2	3	2	3	2	0	0	0	0	0	0	0	0	0
L.O. 2	1	3	3	3	2	2	4	3	3	4	3	4	3	4	2	0	0	0	0	0	0	0	0	0
L.O. 3	3	4	4	4	3	3	5	3	4	3	4	4	4	4	4	0	0	0	0	0	0	0	0	0
L.O. 4	1	3	4	4	3	4	3	3	3	2	3	4	3	3	3	0	0	0	0	0	0	0	0	0
L.O. 5	3	4	2	2	3	4	2	3	2	2	1	3	3	2	4	0	0	0	0	0	0	0	0	0
4													100											<b>•</b>

Ders/Program Çıktıları İlişkisi

P.O. 1 P.O. 2 P.O. 3 P.O. 4 P.O. 5 P.O. 6 P.O. 7 P.O. 8 P.O. 9 P.O. 10 P.O. 11 P.O. 12 P.O. 13 P.O. 14 P.O. 15 P.O. 16 P.O. 17 P.O. 18 P.O. 19 P.O. 20 P.O. 21 P.O. 22 P.O. 23 P.O. 24 P.O. 2