Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Alternative Energy Resources	FZK460	8. Semester	2 + 2	3.0	8.0

Prerequisites	None

Language of Instruction	Turkish
Course Level	Bacheclor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Prof. Dr. İsmail TARHAN
Instructors	Assoc. Prof. Dr. Faruk SOYDUGAN
Assistants	
Course Objectives	This course is an introduction to alternative energy sources. In this course, basic information and descriptions of the renewable energy sources and basic principles, energy resources and quality, energy and environment relationship, in the production of renewable energy efficiency, basic concepts of thermodynamics, enthalpy, entropy, wind energy, fuel cells, energy storage systems and some applications will be discussed.
Course Content	Topics to be covered in this course include are energy types and alternative energy concepts, alternative energy types and production methods, World on the use of alternative energy sources, the use of alternative energy sources in Europe, the use of alternative energy sources in Turkey, the renewable energy potential, solar energy and the effective use of technology, wind energy technologies and efficient use, Fuel battery technologies, hydrogen energy technologies, energy storage systems, other manufacturing technologies and efficient use of energy. Alternative fuel sources of energy and new ideas on, National energy policy in place and the importance of alternative energy, Final examination
Course Learning Outcomes	1) Analyze alternative energy production technologies 2) Evaluate effective use of alternative energy sources 3) Explain alternative energy resources 4) Define varieties of alternative energy sorcues 5) Classify energy production according to sources

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Energy types and alternative energy concepts.	Oral lectures with interactive discussions, homework,	

Quick Access

Physics
- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information
- Course Information
- Weekly Course Content
- Resources
- Assessment
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

		applications, research	
2. Week	Alternative energy types and production methods.	Oral lectures with interactive discussions, homework, applications, research	
3. Week	World on the use of alternative energy sources.	Oral lectures with interactive discussions, homework, applications, research	
4. Week	The use of alternative energy sources in Europe.	Oral lectures with interactive discussions, homework, applications, research	
5. Week	The use of alternative energy sources in Turkey.	Oral lectures with interactive discussions, homework, applications, research	
6. Week	The renewable energy potential.	Oral lectures with interactive discussions, homework, applications, research	
7. Week	Solar energy and the effective use of technology.	Oral lectures with interactive discussions, homework, applications, research	
8. Week	Midterm	Oral lectures with interactive discussions, homework, applications, research	
9. Week	wind energy technologies and efficient use.	Oral lectures with interactive discussions, homework, applications, research	
10. Week	Fuel battery technologies.	Oral lectures with interactive discussions, homework, applications, research	
11. Week	Hydrogen energy technologies.	Oral lectures with interactive discussions, homework, applications, research	
12. Week	Energy storage systems.	Oral lectures with interactive discussions, homework, applications, research	
13. Week	Other manufacturing technologies and efficient use of energy.	Oral lectures with interactive	

		discussions, homework, applications, research	
14. Week	Alternative fuel sources of energy and new ideas on.	Oral lectures with interactive discussions, homework, applications, research	
15. Week	National energy policy in place and the importance of alternative energy	Oral lectures with interactive discussions, homework, applications, research	
16. Week	Final exam	Exam	

RESOURCES

Recommended Sources
-Kruger, P., (2006), Alternative Energy Resources, John Wiley & Soons, New Jersey.
Mathew, S., (2006), Wind Energy, Springer
- Gipe, P., (2004). Renewable Energy. Chelsea Green Publishing Company

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Mid-term exam + Assignment + Research & Project and Presentation 40%, Final Exam 60%		
In-Term Studies	**Quantity**	**Percentage**
Mid Term Exam 1	1	40
Total	1	40
End-Term Studies	**Quantity**	**Percentage**
Final Exam	1	60
Total	1	60
Contribution Of In-Term Studies To Overall Grade		40
End-Term Studies		60
Total		100

COURSE CATEGORY

Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4	DK5
PY1	4	4	4	5	5	4
PY2	5	5	5	4	4	4
PY3	4	5	4	3	4	4
PY4	3	5	5	3	3	4
PY5	4	5	5	4	4	4

PY6	5	4	4	3	3	4
PY7	5	4	4	3	3	4
PY8	5	4	4	3	4	5
PY9	4	4	4	4	3	3
PY10	5	4	4	4	5	3
PY11	5	5	5	3	3	4
PY12	4	4	4	4	3	3
PY13	4	4	4	3	3	4
PY14	4	5	5	4	4	4
PY15	5	4	4	4	4	4

*DK = Course's Contrubution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

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ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Class Hours (14 weeks)	14	4	56
Presentation/Seminar	1	10	10
Final Exam Preparation	1	20	20
Mid Term Exam Preparation	1	10	10
Further Study	12	4	48
Assignment 1	8	4	32
Final Exam	1	3	3
Research&Project	1	10	10
Preliminary Study	8	2	16
		Total Workload	205
		Total Workload / 25.5 (s)	8.04
		ECTS Credit of the Course	8