Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Solar Energy Technologies	FZK457	7. 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. Caner ÇİÇEK
Instructors	Prof. Dr. Caner ÇİÇEK
Assistants	
Course Objectives	This lecture aims to gives information about clean energy.
Course Content	This lecture gives information about clean energy. At this lecture, the subjects that are discussed are particularly obtaining solar energy, using solar energy and applications of solar energy.
Course Learning Outcomes	1) Apply knowledges which are related with natural sciences (mathematics, physics, chemistry) 2) Identify solar energy by knowing basic information about the sun 3) Identify energy and clean energy 4) Analyze engineering applications for solar energy 5) Define problems of related fields , to create formulation for problems and to solve them. 6) Collect sun datas and analyze by comparing it. 7) Identify work method of interdisciplinary. 8) Gain technological knowledge and industrial skills.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Introduction	Oral lectures with interactive discussions, Homeworks, Applications	
2. Week	Structural features of the sun	Oral lectures with interactive discussions,	

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

		Homeworks, Applications	
3. Week	Solar radiation and solar energy	Oral lectures with interactive discussions, Homeworks, Applications	
4. Week	Energy balance in solar panels	Oral lectures with interactive discussions, Homeworks, Applications	
5. Week	Solar pool	Oral lectures with interactive discussions, Homeworks, Applications	
6. Week	Solar energy heating	Oral lectures with interactive discussions, Homeworks, Applications	
7. Week	Solar architecture	Oral lectures with interactive discussions, Homeworks, Applications	
8. Week	Midterm Exam		
9. Week	Greenhouse heating with solar energy	Oral lectures with interactive discussions, Homeworks, Applications	
10. Week	Solar cooling	Oral lectures with interactive discussions, Homeworks, Applications	
11. Week	Solar energy and water	Oral lectures with interactive discussions, Homeworks, Applications	
12. Week	Solar energy and electricity generation	Oral lectures with interactive discussions, Homeworks, Applications	
13. Week	Solar cells	Oral lectures with interactive discussions, Homeworks, Applications	
14. Week	Focusing methods	Oral lectures with interactive discussions, Homeworks, Applications	
15. Week	Solar Heating	Oral lectures with interactive discussions, Homeworks	
16. Week	Final Exam	Written, oral exam	

RESOURCES

Recommended Sources
Solar Energy Technology Advances, Tiwari, G.N., (2005), Springer.
Wind and Solar Power Systems, Patel, M.R., (2005), CRC Press.
Özturk,H. (2008) Solar Energy and Applications, Birsen Press

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Midterm exam (%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	DK6	DK7	DK8
PY1	4	4	4	4	4	4	4	4	4
PY2	4	4	4	4	4	4	4	4	4
PY3	4	4	4	4	4	4	4	4	4
PY4	5	5	5	5	5	5	5	5	5
PY5	4	4	4	4	4	4	4	4	4
PY6	5	5	5	5	5	5	5	5	5
PY7	4	4	4	4	4	4	4	4	4
PY8	5	5	5	5	5	5	5	5	5
PY9	4	4	4	4	4	4	4	4	4
PY10	4	4	4	4	4	4	4	4	4
PY11	5	5	5	5	5	5	5	5	5
PY12	4	4	4	4	4	4	4	4	4
PY13	5	5	5	4	4	5	5	5	5
PY14	4	4	4	4	4	3	3	3	4
PY15	4	4	4	4	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)
Final Exam	1	2	2
Mid Term Exam 1	1	2	2
Assignment 1	6	7	42
Assignment 2	5	8	40
Class Hours (14 weeks)	14	4	56
Presentation/Seminar	2	2	4
Further Study	14	1	14
Preliminary Study	14	3	42
Total Workload			202
Total Workload / 25.5 (s)			7.92
ECTS Credit of the Course			8