

**METU**  
**Department of Mechanical Engineering**  
**ME 478 Introduction to Solar Energy Utilization**  
**Spring 2020**

Instructor : Prof. Dr. İlker Tari, E-104 (ICHMT), itari  
Assistant : Deniz Pinarlı, A-146, pinarli.deniz  
Text : *Solar Engineering of Thermal Processes, 4th Edition*  
*by John A. Duffie, William A. Beckman, Wiley*  
Schedule : Monday 8:40-10:30 and Wednesday 12:40-13:30 in G202.  
Web page : <http://users.metu.edu.tr/itari/me478>

<u>Week</u>	<u>Topics</u>	<u>Chapter</u>
1	Radiative Transfer and Conjugate Heat Transfer in Solar Collector Applications	3
2	Radiation Characteristics of Opaque Materials	4
3	Radiation Transmission through Glazing: Absorbed Radiation	5
4	Solar Radiation basics	1
5	Available Solar Radiation	2
6	Flat-Plate Collectors	6
7	Flat-Plate Collectors	6
8	Concentrating Collectors	7
9	Concentrating Collectors	7
10	Energy Storage	8
11	Solar Process Loads	9
12	System Thermal Calculations	10
13	Solar Engineering Applications	Part II
14	Solar Engineering Applications	Part II

Attendance to the first lecture is required. The students will be selected according to their ME312 grades and CGPAs from the first lecture attendance list.

Homework : The problems will be assigned weekly and collected on time. Some will include SMath Studio calculations or some programming.

Attendance : 100% attendance is expected. Participation is extremely important.

Grading :

Midterm Exam	: 30%
Homework and attendance	: 30%
Final Exam	: 40%