

**EECE 325 Fundamentals of Energy Systems**  
 Department of Electrical Engineering and Computer Science

Course Number	Course Name	Semester
EECE325	Fundamentals of Energy Systems	SPRING SEMESTER

**Class Hours:** MW 11:40 - 1:00 PM

**Catalog Data:** EECE325 Fundamentals of Energy Systems, 3 Credits. This course focuses on the fundamentals of energy systems centered around electric power generation. Starting with the traditional system of large, central power stations connected to their customers by hundreds or thousands of miles of transmission lines, this course covers distributed, renewable, cleaner, smaller generation systems located closer to their loads. In that regard, while other generation sources such as Biomass and Fuel Cells are covered, wind power generation systems and photovoltaic (PV) power generation systems are highlighted in the course.

**Textbook:** Gilbert Masters, Renewable and Efficient Electric Power Systems, John Wiley & Sons, Hoboken, NJ, 2004.

**References:** Sarma, Electric Machines, WEST Publishing Co. 1996

**Instructor:** Dr. Charles Kim (Office: LKD3014, 202-806-4821, ckim@howard.edu)  
 Office Hours: WR 2 - 4 pm

**Goals:** The purpose of this course is to study power systems, its individual components, power generation, and distributed generation, and renewable energy generation.

**Pre- or Co-requisites:** Co-Requisite EECE326 Fundamentals of Energy Systems Lab

**ABET Outcomes:** ABET student outcomes addressed by the course: (a) The ability to apply knowledge of mathematics, science, and engineering; and (j) Knowledge of contemporary issues.

**Topics:**

A. Energy Industry and Distributed Generation Chapter 2 Power Systems - Review Chapter 3 Electric Power Industry Chapter 4 Distributed Generation	January - February
B. Wind Power Systems Chapter 6 Wind Power Systems	February - March
C. PV Power Systems Chapter 7 Solar Resources Chapter 8 PV Materials and Characteristics Chapter 9 PV Systems	March - May

**Grading:**

Exam1	20
Exam2	20
Class Activities and Assignment	30
Final Exam	30
On-Time Attendance (bonus)	5
<u>Total</u>	<u>100</u>

**Expected performance curve:**

A	Score $\geq 90$
B	$80 \leq \text{score} \leq 89$

C	$70 \leq \text{score} \leq 79$
D	$60 \leq \text{score} \leq 69$
F	$\text{score} \leq 59$

**Safety/Ethics:** Safety and professional ethics are emphasized in this course. See "Safety Manual" (located in Advanced Electronics Lab,) and "Electrical Engineering Undergraduates" handbook.

**Note:** Under the Americans with Disabilities Act of 1990, if you want to be identified as a person with a disability and need accommodations, please advise me by making an appointment.