

# ALT 545: Automotive and Stationary Fuel Cells

Electronic Systems Department

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## Course

ALT 545: Automotive and Stationary Fuel Cells  
Section: 99999  
Technology Center 189  
M W 3:00 pm – 9:00 am

## Instructor Information

Instructor: Dr. Lakshmi V. Munukutla, Ph.D.  
Email: [Lakshmi.Munukutla@asu.edu](mailto:Lakshmi.Munukutla@asu.edu)  
Phone: (480) 727-1847

## Office Hours

Location: Technology Center 101  
Time: 9:00 am – 10:00 am or by appointment

## Course Materials

Textbook: none  
Blackboard: we have already been enrolled in blackboard

## Prerequisites

This is an undergraduate/graduate course in alternative energy technologies, but is open to students from all science and engineering backgrounds. Students from other disciplines should have a good understanding of engineering principles and basic electronics, chemistry, physics and biology. Some problem solving skill will be required.

## Course Description

Fuel cell technology continues to attract a great deal of interest as an alternative power source to the IC engine drive train. Even though significant technical progress has been made, broad application and the eventual success of FC technology in automotive applications remain elusive. Stationary fuel cell power generation systems have been in the field for years, proving to be a viable technology due to the fact they can be localized avoiding power transmission. More than 2000 FC power generation systems are in operation providing back-up power as well as on-site locations in several counties.

### Purpose:

The main objective of this course is to give a theoretical and practical overview of various fuel cell systems, analyzing power demand for specific applications of stationary and automotive applications and the overall environmental and cost benefits. The objective is also to emphasize the problem solving skills through theoretical knowledge and laboratory experiments on PEM fuel cell systems.

## Methodology

This will be a classroom based course with no lab.

## Grading Policy

100% - 90%	A
89% - 80%	B
79% - 70%	C
69% - 60%	D
59% and below	F

## Course Requirements

### Attendance

Attendance is required for all classroom sessions.

### Email and Internet

You must have an active ASU e-mail account and access to the Internet.

### Studying and Preparation Time

In addition to the time spent in the face-to-face classroom sessions plan on devoting 2 – 3 hours each week to homework. Homework may include assignments and reading related to a face-to-face session already completed or as preparation for the upcoming face-to-face session.

### Late or Missed Assignments

All assignments must be finished and turned in to complete the course.

### Submitting Assignments

Assignments will be submitted both in class and online through blackboard.

### Drop and Add dates

Because this course is only 5 weeks, there is limited opportunity to either drop or add the course. You can drop the course up to the end of the second week and add only to the end of the first week.

### Use of cell phones, pagers, and PDAs

Please turn off or silence *ALL* cell phones, pagers, and PDAs prior to coming to the face-to-face class sessions. If you have an emergency and need to keep in communication with someone, please inform your instructor ahead of time.

### Use of laptops in class

Lap tops are not required for this course. You may use your laptop to take notes. Please do not use class time for emails, chats, web browsing, or other non-class related activities.

## **Subject to change notice**

All material, assignments, and deadlines are subject to change with prior notice. It is your responsibility to stay in touch with your instructor, review the blackboard regularly, or communicate with other students, to adjust as needed if assignments or due dates change.

## **Americans with Disabilities Act**

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. One element of this legislation requires that all qualified students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation please contact the Disability Resource Center at ASU Polytechnic located in Student Affairs Quad # 4 or call 480-727-1039 / TTY: 480-727-1009. Eligibility and documentation policies online: <http://www.asu.edu/studentaffairs/ed/drc/>

## **Academic Integrity**

Academic Integrity is very important to the Electronic Systems Department (ESD). To build a long-lasting base of integrity in the community and elsewhere, ESD will not allow any type of academic dishonesty which includes: cheating, plagiarism, collusion, or falsifying of any academic records. If a student is determined to be academically dishonest then they will receive an XE on their transcripts and will have an immediate review by the department chair.