

# VEHICLE ELECTRONICS AND CONTROLS

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The increasing use of electrical systems and electronic sensors and devices in vehicles and automobiles has resulted in new developments in this field for vehicle application. With rapid progress in battery technology, it is envisaged that electric vehicles will become more affordable and more efficient. Electric drive control requires the use of power devices which are primarily high power electronic devices. Modern vehicles will rely on both analog and digital hardware for efficient operation of the vehicle. Engineers would be required to be well versed in the design of hybrid electrical and electronic systems.

The Vehicle Electronics certificate will introduce the participants to analog and digital electronics. Starting with simple diodes and rectifiers, students will be introduced to other solid state devices that are used in electronic circuits. Participants will learn the design of amplifiers, switches and other commonly used circuits. They will also receive instruction on digital logic and the use of microprocessors. Besides featuring hands-on laboratory practice, participants will be involved in several group design projects. (12 credit hours)

*Certificate offered on Campus and via Distance Learning*

## Coursework Requirements

Code	Title	Credit Hours
Please choose four courses to complete the required 12 credit hours.		
AENG 510	Vehicle Electronics I	3
AENG 545	Vehicle Ergonomics I	3
ECE 505	Intro to Embedded Systems	3
ECE 515	Vehicle Electronics II	3
ECE 519	Adv Topics in EMC	3
ECE 531	Intelligent Vehicle Systems	3
ECE 532	Auto Sensors and Actuators	3
ECE 5462	Elec Aspects of Hybrid Vehicle	3
ECE 533	Active Automotive Safety Sys	3