



## College of Engineering and Science

# Advanced Electric Vehicle Graduate Certificate

### Program Summary

The purpose of this certificate program is to rapidly infuse important Advanced Electric Vehicle (AEV) knowledge and capabilities into the technological teams of the automotive and defense ground vehicle industries. It is aimed at specific learning outcomes defined in direct collaboration with leaders in AEV development at Ford Motor Company. Students successful in these courses will learn to apply their engineering talents, and formal model-based design techniques, to the development of advanced electric vehicles.

### Admission Requirements:

Requires an undergraduate degree in engineering or science, or five years of relevant professional experience (in addition to permission of the program director). AEV Certificate can be pursued as a stand-alone certificate, or its course scan be applied to the pursuit of one of four master's degree programs within UDM's College of Engineering and Science. Also, AEV Certificate can be completed in one calendar year.

### Certificate Requirements:

The program requires students to complete five of the seven AEV courses, including three required courses:

#### Required Courses (9 credit hours)

<b>AEV 5010:</b>	Intro to Advanced Electric Vehicles	3 cr. hrs.
<b>AEV 5020:</b>	Controls Modeling & Design for AEV	3 cr. hrs.
<b>AEV 5050:</b>	Electric Drives/Electromechanical Energy Conversion	3 cr. hrs.

#### Elective courses (choose 2 courses - 6 credit hours)

<b>AEV 5030:</b>	Energy Storage Systems	3 cr. hrs.
<b>AEV 5040:</b>	Power Electronics for Electric Vehicles	3 cr. hrs.
<b>AEV 5060:</b>	Innovation and System Architecture for Advanced Electric Vehicles	3 cr. hrs.
<b>AEV 5070:</b>	Systems Engineering for Advanced Electric Vehicles	3 cr. hrs.

Students wishing to specialize in a particular focal area should choose their elective courses to reflect the desired focus.

#### Systems Specialization

<b>AEV 5060:</b>	Innovation and System Architecture for Advanced Electric Vehicles	3 cr. hrs.
<b>AEV 5070:</b>	Systems Engineering for Advanced Electric Vehicles	3 cr. hrs.

#### Energy Storage and Electronics Specialization

<b>AEV 5030:</b>	Energy Storage Systems	3 cr. hrs.
<b>AEV 5040:</b>	Power Electronics for Electric Vehicles	3 cr. hrs.

For more information, please visit: [eng-sci.udmercy.edu/academics/engineering/aev](http://eng-sci.udmercy.edu/academics/engineering/aev)

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