

# Advanced Automotive Systems Emphasis

## Department of Mechanical and Aerospace Engineering, Ohio State University

- A total of 12 credit hours are required to complete the Technical Elective Requirements
- Students must complete two courses (a minimum of 6 credit hours) from two of the three categories (Design, Computational, Applications)

**This is an example curriculum. All students must meet program requirements as detailed here: <https://mae.osu.edu/mechanical-engineering-technical-electives>**

### Design Classes- Take up to 9 credit hours of

Course	Hours	Course Name
ME 5194 (Metzler)	3	Smart Product Design
ME 5194 (Srinivasan)	3	Control System Design
ME 5240	3	Mechanical Vibration
ME 5372	3	Design and Control of Mechatronic Systems
ME 5374	3	Smart Materials and Intelligent Systems

### Computational Classes- Take up to 9 of 12 credit hours of

Course	Hours	Course Name
ME 5194 (Shah)	3	CAD Modeling Techniques for Mechanical Design using CATIA
ME 5139	3	Applied Finite Element Method
ME 5339	3	Simulation Techniques for Dynamic Systems
ME 5530	3	Internal Combustion Engines
ME 5539	3	Applied Computational Fluid Dynamics and Heat Transfer

### Applications Classes- Take up to 9 of 12 credit hours of

Course	Hours	Course Name
ME 5194 (Midlam-Mohler)	3	Model Based Design and Hardware in the Loop
ME 5234	4	Vehicle Dynamics
ME 5241	3	Engineering Acoustics
ME 5502	3	Engineering Thermodynamics
ME 5427	3	Introduction to Turbomachinery
ME 5530	3	Internal Combustion Engines
ME 5531	3	Advanced Automotive Systems Analysis/ Laboratory
ME 5541	3	HVAC

### Other Classes- Take no more than 3 credit hours of the following

Course	Hours	Course Name
ECE 5553	3	Autonomy in Vehicles
ECE 5554	3	Powertrain Control Systems
ACCTMIS 2000	3	Foundations of Accounting
BUSMHR 2500	3	Entrepreneurship
PUBAFRS 3000	3	Introduction to Public Policy Analysis
PUBAFRS 5600	3	Science, Engineering, and Public Policy