Fundamentals of Internal Combustion Engines

This 8-hour self-paced seminar on DVD is a component of the Powertrain Modeling and Control courses, and covers both SI and CI engines.

Lectures feature the following topics:

- Overview of engine types
- Working principles and basic mechanical components
- Definition of geometric and operating parameters and performance
- Engines as integral part of Powertrain and vehicles
- Introduction of engine cycle analysis
- Modes of combustion and fuels
- Overview of engine modeling, gas exchange processes
- Fueling, ignition and cooling systems, emissions
- Overview of after-treatment systems
- Engine control, sensors and actuators
- New trends in ICE

Prerequisite: Basic knowledge of Thermodynamics, Chemistry, Fluid Mechanics and Mechanical Systems

Ohio State University’s automotive engineering certificates include international collaboration with European partners, Swiss Federal Institute, ETH, and University of Stuttgart, as well as with Asian partner, Korean Advanced Institute of Science and Technology.