## Prerequisites

*MATLAB Fundamentals*, *Simulink for System and Algorithm Modeling*, and *Modeling Physical Systems with Simscape*

### Day 1 of 1

<table>
<thead>
<tr>
<th>Topic</th>
<th>Objective</th>
<th>Details</th>
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| **Introduction to Vehicle Modeling** | Create and analyze vehicle body and tire models under various terrain, wind, and friction conditions. | Vehicle body modeling  
Friction, wind, and terrain effects  
Sensing physical quantities  
Dividing model and measurements |
| **Braking Systems**           | Model vehicle braking systems with built-in blocks and custom Simscape language components. | Simscape Driveline brake blocks  
Measuring wheel quantities  
Custom brake model |
| **Transmission Mechanisms**   | Build and test mechanical power transmission systems in Simscape Driveline. | Actuating models with power sources  
Building driveline mechanisms  
Creating a multispeed transmission |
| **Multidomain Drive and Control** | Connect mechanical automotive models to other physical domains in Simscape and create realistic closed-loop control strategies. | DC motor drive  
PWM actuation  
Closed-loop speed control |