# ROS-I Developers' Training

The ROS-Industrial Consortium Americas is providing a three-day ROS-Industrial Developers Training Class focusing on ROS2 Foxy. The class will run two full days with a Day 3 focused more on exercises/lab type application. This class will be hybrid and will be provided via AWS EC2 instance. The class is geared toward individuals with a C++ programming background who seek to learn to compose their own ROS nodes. Day 1 will focus on introductory ROS2 skills (Details Below). Day 2 will examine motion planning using MoveIt2, as well as the Descartes planner and perception concepts. Day 3 will be open forum and support to do laboratory type exercises to enable students sustained success after the training. In person will focus on advanced topics day 1 and hands-on lab with an industrial manipulator on Day 3.

The ROS-Industrial *Consortium* is a membership organization. Training is free to dues-paying members (limit three seats per Full member, two seats per Associate member, and one seat per Research member ). Others may attend for a fee of $2,199.

Class Prerequisites:

Basic understanding of programming (C++ preferred), Ubuntu Linux, and Linux command line. If Linux and C++ are new to you, complete the prerequisites of the online curriculum for background.

Event Location: Online via Zoom

Training Delivery: AWS EC2 Instance

For more information, please contact:
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## Agenda

| | | Training Topic |
|---|---|---|
| **Day 1 Classroom** | 0850-0900 | Sign-in, Introductions, and Agenda |
| | 0900-1015 | ROS Overview, ROS1 and ROS2, Installing Packages |
| | 1015-1030 | Break |
| | 1030-1200 | Creating Packages/Nodes, Using Topics and Messages |
| | 1200-1300 | Lunch – SwRI Overview Presentation |
| | 1300-1430 | Services, Actions |
| | 1430-1445 | Break |
| | 1445-1700 | Launch Files, Parameters |
| **Day 2 Classroom** | 0850-0900 | Sign-In/Recap |
| | 0900-1015 | ROS Interoperability, URDF, Xacro |
| | 1015-1030 | Break |
| | 1030-1200 | TF, Intro to Motion Planning, MoveIt/MoveIt2, Building a MoveIt Package |
| | 1200-1330 | Lunch |
| | 1330-1500 | Motion Planning Using Rviz, C++ |
| | 1500-1515 | Break |
| | 1515-1700 | Introduction to Perception, ROS1-ROS2 bridge Exercise |
| **Day 3 Lab** | 0850-0900 | Sign-In/Recap |
| | 0900-1030 | Lab Introduction – Perception Driven Manipulation |
| | 1030-1045 | Break |
| | 1045-1200 | Work on Lab Applications (Additional Option/Presentation Planned) |
| | 1200-1245 | Lunch |
| | 1245-1530 | Work on Lab Applications |