



# ROS-I Developers' Training

The ROS-Industrial Consortium Americas, hosted by Caterpillar, is providing a three-day ROS-Industrial Developers Training Class with both Basic and Advanced Track Offerings. The class will run three full days. Please bring a laptop to the class with the ROS-I training Virtual Machine pre-installed. This 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 ROS skills/Advanced Topics. Day 2 will examine motion planning using MoveIt!, as well as the Descartes planner and perception concepts. Day 3 offers a lab programming exercise with a choice of Pick-and-Place Application or Descartes Application.

## Agenda

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: Caterpillar Visitor Center, 110 SW Washington St, Peoria, IL 61602

Accommodations: Mark Twain Hotel – Peoria, 225 NE Adams St, Peoria, IL 61602 (Block Reserved under ROS-I)

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		Basic	Advanced		
Classroom	Day 1	0815 Depart from the hotel 0835-0900 Sign-in, Introductions, and Agenda 0900-1015 ROS Setup, Catkin, Installing Packages 1015-1030 Break 1030-1200 Creating Packages/Nodes, Topics, Messages 1200-1300 Lunch (Provided) – SwRI Overview Presentation 1300-1430 Services, Actions 1430-1445 Break 1445-1700 Launch Files, Parameters 1720 Wrap-up	Depart from the hotel Sign-in, Introductions, and Agenda Building a Perception Pipeline Break Building a Perception Pipeline Lunch (Provided) – SwRI Overview Presentation Introduction to Qt Creator, Doxygen, Unit Testing Break Debugging within ROS, Introduction to STOMP Wrap-up		
	Classroom	Day 2	0815 Depart from the hotel 0835-0900 Recap and Agenda 0900-1015 URDF, Workcell XACRO 1015-1030 Break 1030-1200 TF, Build a MoveIt! Package 1200-1330 Lunch (Provided) 1330-1500 Motion Planning Using Rviz, C++ 1500-1515 Break 1515-1700 Introduction to Descartes Path Planning and Perception 1720 Wrap-up		
		Lab	Day 3	0815 Depart from the hotel 0835-0900 Recap and Agenda 0900-1030 Building a Perception Pipeline, Recap 1030-1045 Break 1045-1200 Lab Introduction, Labs 1200-1245 Lunch (Provided) 1245-1530 Work on Lab Applications 1600 Wrap-up, Surveys	