Course Description

The FIRST® Tech Challenge Academy professional development is a 40-hour course that gives attendees a deep understanding of a FIRST Tech Challenge season and how to implement the program to achieve science, technology, engineering, and math (STEM) learning objectives. In FIRST Tech Challenge, students learn to think like engineers. Teams design, build, and program robots to compete in an alliance format against other teams with a spirit of friendly competition. Many call it “the hardest fun you’ll ever have.” Participants in this course will walk through the season as they engage in these hands-on experiences and practice engineering principles such as fabrication, 3D printing, keeping an engineering notebook, and planning for interdisciplinary awards applications.

Course Requirements

FIRST® Provides:

- FIRST® Tech Challenge Robot kit - TETRIX FIRST Tech Challenge Set and REV Robotics Kit
- Control and Communication Set
- Electronics Module and Sensor Set

Participant Brings:

- Computer with internet access

Course Objectives

By the end of this course, you will:

- Participate in the FIRST experience from a student’s point of view
- Explore the essential components of the FIRST Tech Challenge program
- Feel comfortable using hardware and software components of FIRST Tech Challenge robotics kits in addition to fabrication techniques and 3D printing
- Understand how to code using Blockly programming software using autonomous and remote-control utilizing Tensor Flow, Inertial Measurement Units, and Sensors
- Learn how to facilitate hands-on activities for the classroom or after-school programs
- Be able to foster computational thinking, collaboration, and problem-solving skills in students
- Have experience with Project-Based Learning, the Engineering Design Process, and 21st Century Skills
- Learn to build teams, participate in robot game matches, and present to judges
- Utilize, model, and reinforce the FIRST Core Values