FIRST® Tech Challenge Remote Professional Development

Remote Course Description

The *FIRST®* Tech Challenge professional development course is designed for new and experienced teachers, facilitators, coaches, and mentors to enhance their overall *FIRST®* program knowledge, giving participants a strong understanding of how to implement all aspects of the program and how to achieve 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 in the footsteps of the students as they engage in these hands-on experiences and practice engineering principles such as keeping an engineering notebook.

Remote Course Requirements

- Computer with Internet Access (Required: second screen or device to allow programming and video communication at the same time)
- *FIRST* Tech Challenge Robot kit - Unbuilt TETRIX **or** REV Robotics Kit
- Control and Communication Set
- Electronics Module and Sensor Set
- Download REV Hardware client software prior to first session. https://docs.revrobotics.com/rev-hardware-client/. This program is needed for all electronic hardware used to build the *FIRST* Tech Challenge robot and only operates on MS Windows OS device.

  Mac Users: Please note that an Apple OS version of the hardware client is currently unavailable. To update the firmware and hardware, please refer to the *FIRST* Tech Challenge support documentation for detailed instructions on utilizing Manual Update Method 2 as outlined by REV. Instruction are found at https://ftc-docs.firstinspires.org/en/latest/ftc_sdk/updating/controlhub_os/Updating-the-Control-Hub-OS.html.

Remote 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.
- Understand how to code using Blockly programming software.
- Learn how to facilitate hands-on activities for the classroom or after-school programs.
- Collaborate with other participants and share best practices.
- 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.
- Implement Diversity and Inclusion practices.
- Utilize, model, and reinforce the *FIRST* Core Values!